Fishing in Algonquin Provincial Park

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Cover Photo: A fine 4 kg (9 pound) Lake Trout caught in the interior of Algonquin Park by trolling from a paddled canoe, August 6, 1983.

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Aerial view of Opeongo Lake, looking north. Opeongo is the largest lake in Algonquin, has one of the most important lake trout and smallmouth bass fisheries, and has figured very prominently in the Park's long history of fisheries research.

Algonquin Provincial Park is justly renowned for some of the finest fishing in Ontario. Its hundreds of clear, cold lakes are ideal for trout and many a fine day in the Park has been topped off with a delicious meal cooked over an open fire in beautiful, wild surroundings.

Yet many visitors come to Algonquin with little or no idea of how to fish, where to fish, or even the kinds of fish that may be expected. The results of this approach are predictably disappointing and it is the purpose of this book to give you the knowledge that may make the difference between success and failure. In the following pages we will discuss not only the "how and where" of fishing in Algonquin, but also some of the basic facts about fish and lake biology. These facts may not seem important at first but knowing them is essential for an understanding of why fish behave as they do (and hence of how to catch them). We will also discuss the history of fisheries research in Algonquin and how our findings have been, and are being, applied to fisheries management in the Park.

The fisherman who comes to Algonquin expecting pike, muskellunge and walleye should know that they are restricted to rather small ranges on the eastern and southern fringes of the Park. The fish Algonquin is famous for are lake trout and brook trout and, indeed, both these species are widely distributed in lakes right across Algonquin.

There are two main reasons for these differences in distribution. The first is that Park lakes are cold and deep, conditions to which brook and lake trout are adapted but which are less suitable for walleye and muskies, both of which prefer warmer, shallower, and weedy bodies of water.

Even more important is the history of the Park area. In a very real sense, all of our fish are newcomers because it was only 11,000 years ago that the last glacier, as much as two kilometres thick, finally melted back from the Park area. Cold water fish were able to follow the retreating glacier by invading the huge volumes of icy melt water. This is why, even before the glacier had melted far to the north and today's pattern of lakes was established, cold water fish like ling, whitefish, lake trout, and brook trout were already established throughout the Park. Warm water fish, however, were unable to live in the glacial meltwater and by the time the Park had warmed up enough for these fish, the waters had subsided, leaving impassable stream barriers which prevented the warm water fish from gaining access to the Park headwaters. To this day, pike, muskellunge, and smallmouth bass have been unable to penetrate into the park farther than the lower portions of the Petawawa and Bonnechère watersheds.

As early as 1899, however, bass were introduced to many lakes along the now abandoned Ottawa, Amprior and Parry Sound Railway running through the south central part of the Park, and today many lakes in or near the Parkway corridor support good smallmouth bass fisheries.

In summary then, the lake trout, the brook trout, and the smallmouth bass, in that order, are Algonquin's most important game fish. By consulting the list near the back of this book you can determine which fish are in which lakes and get some idea of the success you may expect in each of them. But this is just a beginning. The successful fisherman seeks to understand the inner workings of a lake and the basic habits and needs of the fish that live there. These matters are taken up in the following section.

What Do We Know About Algonquin Lakes and Game Fish?

Although there are numerous unanswered questions about Park fisheries, there would be many more if it had not been for a far-sighted decision made back in 1936 – the year Highway 60 was completed through Algonquin. The Superintendent of the time (Frank MacDougall, for whom the Park section of the highway was named in 1976) foresaw that the new road would bring greatly increased pressure on the Park fisheries and he invited Dr. W. J. K. Harkness of the University of Toronto to establish a field research station in the Park. Since its modest beginnings on Lake Opeongo that year, the station, re-named the Harkness Laboratory of Fisheries Research in 1961, has become one of the most important centres in Canada for freshwater fisheries research. Literally hundreds of scientific papers, theses, popular articles, and reports have been based on work done at the "fish lab", and the list of teachers and students who have worked there reads like a "who's who" of senior government and university fisheries personnel. There have been four main areas of research. One has involved studies of the physical and chemical characteristics of Park lakes which put a basic limit on the number and size of fish that can be produced (and caught) each year. The other three principal research activities have been long term studies on the depth distribution, movements, food habits, growth rates, and reproduction of lake trout, brook trout, and smallmouth bass.

A second major source of information about Algonquin Park lakes and their fish communities came into being in 1975. This is the Algonquin Fisheries Assessment Unit, one of 15 similar units set up by the Ministry of Natural Resources across Ontario to gather basic chemical and biological information from selected lakes in a continuing and systematic way. To be effective, fisheries management must be based on sound information (not guesswork) but getting that information requires considerable expense and effort. Even worse, Ontario has literally tens of thousands of lakes (approaching 1500 just within Algonquin) and monitoring all of them in sufficient detail to support good management would cost a fortune. The idea of Ontario's fisheries assessment units, then, is to concentrate limited resources on just a few representative lakes so that solid information gathered from them can then be reasonably inferred to apply to other similar lakes. The Algonquin Fisheries Assessment Unit, for example, studies thirteen lakes carefully chosen to represent the whole range of lake and fish community types to be found in the Park area.

To cite one specific case, Smoke Lake was selected by the Unit to represent the several large lakes along Highway 60 having a lake trout – lake whitefish – smallmouth bass fish community and receiving very high fishing pressure. Conclusions drawn from Smoke Lake may be fairly applied to other very similar (but unstudied) lakes like Rock, Whitefish, Two Rivers, Source, Canoe and Tea.

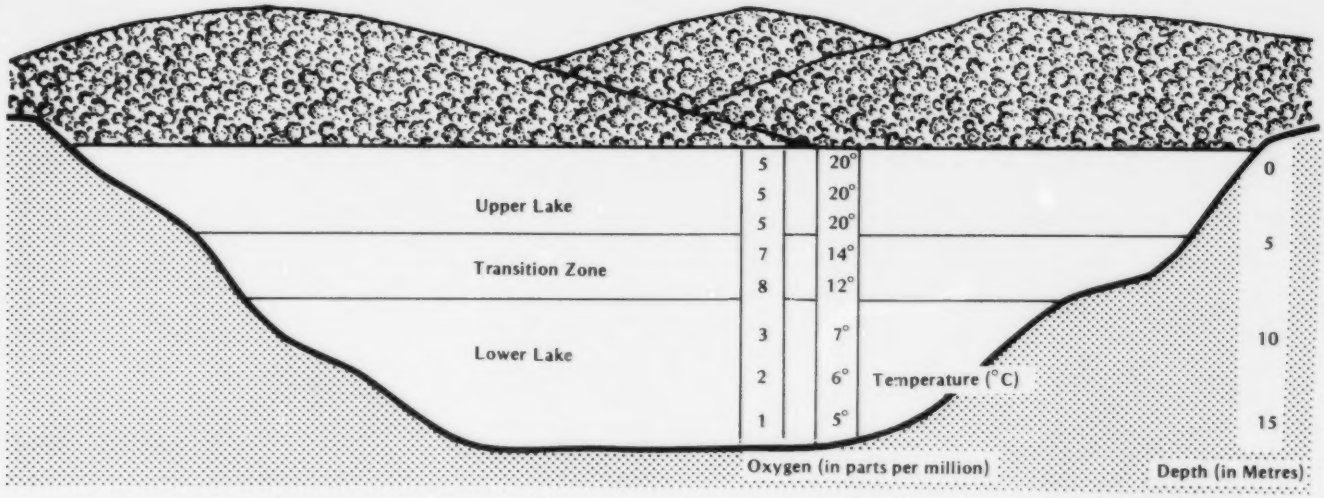
In the following pages we will present the basic knowledge that has been gained through the work of the Harkness Lab and the Algonquin Fisheries Assessment Unit.

Basic Living Conditions

It is easy for us to make the mistake of thinking that Algonquin lakes are favoured sanctuaries and that the fish in them can swim about wherever they please, totally unaffected even by the local weather or surroundings, let alone by events taking place far away in the cities where most Park visitors come from.

In truth, all lakes, even remote lakes in the middle of Algonquin Park, are very much influenced by the "outside world".

A crew from the Algonquin Fisheries Assessment Unit at work. Here they are measuring the dissolved oxygen content at various depths.



In summer, most Algonquin lakes separate into two distinct bodies of water, a warm "upper lake", and a cold "lower lake", separated by a narrow transition zone. The two "lakes" do not mix, and the lower one is effectively cut off from the air by the upper lake. One consequence of this is that the oxygen supply in the lower lake (originally taken on during the spring turnover) cannot be replenished during the summer and gradually diminishes as it is consumed by the decay of dead plants and animals on the bottom of the lake.

Temperature Layers – Anyone who has taken a deep dive from a dock in the summertime knows that the surface water is warm and then, past a certain depth, the water suddenly becomes very cold. In fact, this summer division of a lake into a warm surface layer 3 to 6 metres thick, a narrow transition layer in which the temperature drops off rapidly, and a third, cold layer which is a uniform 5 or 6°C all the way to the bottom, is so well known that most people take it for granted. There are, however, several very important consequences of these summertime temperature layers. One stems from the fact that our three principal game fish have distinct temperature preferences – in fact they may even die if they are prevented from living in their preferred layer. Bass prefer the warm, upper layer and you may therefore expect them close to the surface and close to shore where food is most abundant. Brook trout prefer the transition zone, and lake trout require the cold temperatures of the lowest zone. For this reason, you cannot expect to find trout near the surface in the middle of the summer. By the same token, the transition zone and lowest zone may not even start until depths of 5 and 8 metres respectively, and the lake may not get that deep until you go 10 or 20 metres out from shore. As a result, it is almost useless to attempt fishing for either species of trout from the shore in the middle of summer.

There is a second very important fact about summer temperature layers that most people are unaware of. This is the fact that the layers do not mix with each other – not even slowly. For all intents and purposes a lake in summer is divided into two distinct bodies of water, a warm, upper lake and a cold, lower lake separated by the narrow transition zone. The non-mixing of the two "lakes" has important consequences – not the least of which is what it does to the oxygen supply.

Oxygen and Where You Find It – The dissolved oxygen required by fish and other aquatic animals gets into the water by being forcibly mixed in through wave action and then distributed within the lake by wind-generated currents. But because the warm, upper lake does not mix with the cold, lower lake, only the upper lake has its oxygen supply renewed by wave action all summer long. The lower lake (cut off from the air by the upper lake) has no infusion of new oxygen at all during the summer. The oxygen content of the cold, lower lake therefore decreases in the summer months, not only because the fish living there (like lake trout) are "breathing" it, but also because the decay of dead plants and animals on the lake bottom uses up oxygen. By mid-August the oxygen levels at the bottom may be very low indeed and not much higher in the rest of the lower lake.

Such oxygen depletion can also occur in the winter (when the entire lake is cut off from the air, this time by ice) and may, in extreme cases, bring about the asphyxiation of fish. In most Algonquin lakes, however, the levels rarely or never fall to the danger point before the spring and fall conditions are reached when the water is a uniform 4°C throughout the lake and wind-generated currents circulate from the surface right down to the bottom of the lake and bring in a fresh supply of oxygen.

These critical periods of oxygen renewal are called the spring and fall turnovers and are of great importance to such oxygen-demanding fish as lake trout and brook trout. The lake turnovers have another consequence as well. Because there are no temperature barriers within the lake at those times there is nothing to prevent either trout species from availing themselves of the more abundant food supplies in shallower areas of the lake. That is why both brook and lake trout may be found at the surface and easily caught (even from shore) in May just after the ice goes out of Park lakes.

Do Fish Worship Rocks? It is a surprising fact that the numbers and growth of fish in a lake are controlled by the rocks in the surrounding hills.

The process works like this. Even trout, which are predators at the top of a lake's food chain, ultimately depend for sustenance on the microscopic green plants in a lake called algae. The more algae there are in a lake, the more algae-eating insects and other small animals there will be, the more small fish there will be and, eventually, the more predators like trout there will be. It follows, then, (other things being equal) that a lake is a good trout producer if it is a good algae producer and that we must understand the requirements of algae if we are to appreciate why a given lake is a good trout producer or not.

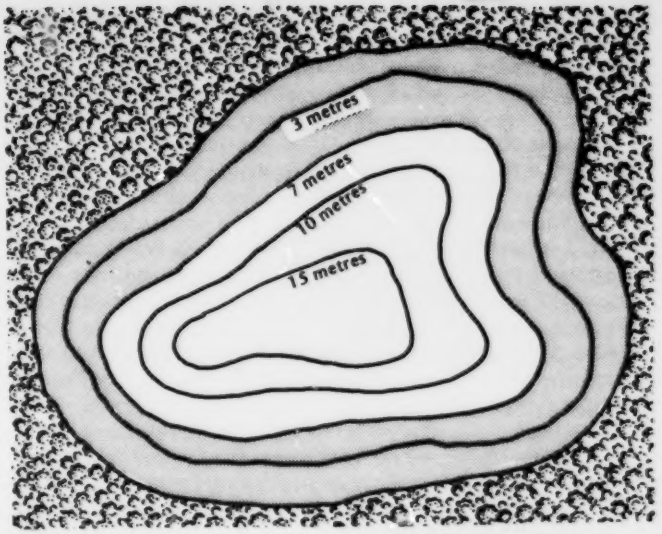
Algae, being green plants, basically need water, sunlight, and carbon dioxide and with these simple ingredients grow their own food. However, they also need – just as we humans do – minute but definite amounts of other substances like nitrogen, calcium, and phosphorus. These substances are called "nutrients" and they must be present in a lake if algae are to live there. In fact, the more nutrients there are, the more algae there will be and, ultimately, the more fish like trout.

This is where the rocks come in. The source of all the nutrients in a lake (except for nitrogen) is the rocks surrounding the lake or upstream from it. Some areas have rocks that are rich in nutrients and have very productive lakes but Algonquin Park is not one of them. The Park lies near the southern edge of the great Canadian Shield, a huge area of granitic bedrock which is very poor in nutrients and also very hard. Thus, Algonquin Park rocks break down very slowly and yield their nutrients to the soil (and eventually the lakes) very slowly and sparingly. Added to that, many lakes in Algonquin have very small drainage basins – meaning that the areas which can contribute nutrients to the lakes are very small.

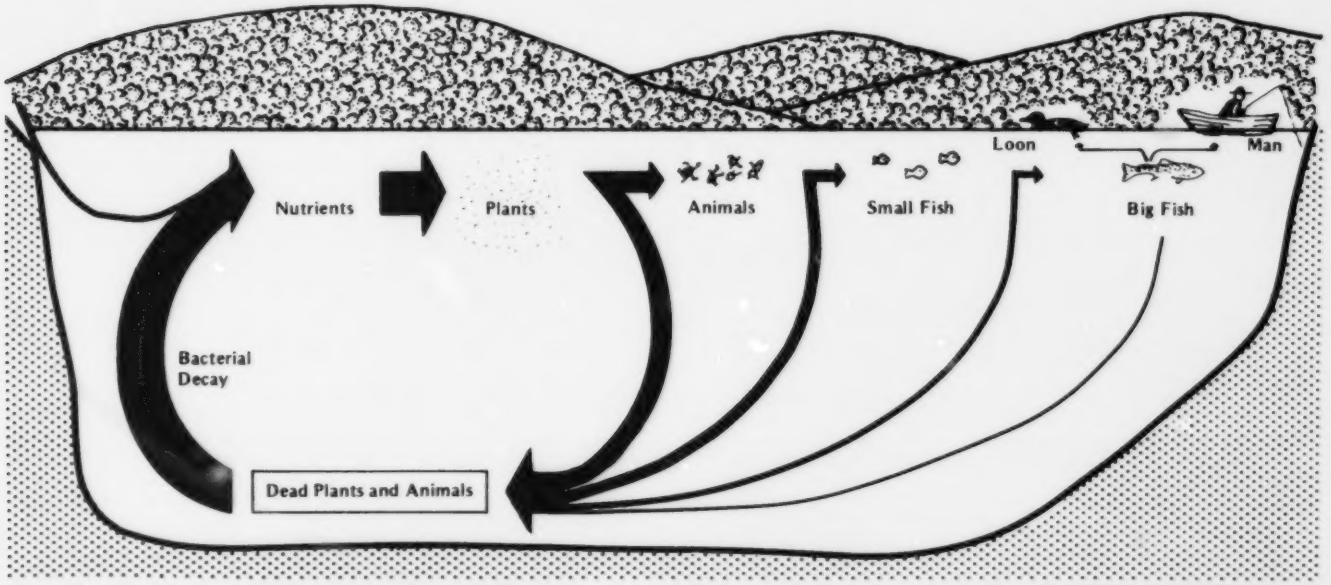
All these things mean that Algonquin waters are low in nutrients. This relative sterility limits the growth of algae which in turn limits the population of small animals and fish, and puts a low limit on the amount of game fish which can be "grown" in our lakes. Natural sustained trout production in Algonquin lakes rarely, if ever, exceeds 560 grams of trout per hectare of lake each year (half a pound per acre). By contrast, lakes lying on the softer, more nutrient-rich limestone rocks of southern Ontario often produce 20 times as much.

On top of all this, much of a lake's precious supply of nutrients may, at any given time, be out of circulation and hence unavailable to living algae. The problem is that much of the supply is contained in the dead plants and animals that sink to the bottom of the lake. This doesn't matter much if the dead bodies come to rest in water less than 7 metres deep. In this case the dead material will still be in the warm upper lake and bacterial decay will be quite rapid because the water is warm and there is no shortage of oxygen (needed for the decay process). In other words, the nutrients contained in the dead bodies will be released fairly quickly and will once again be available to support new life in the upper lake.

If, on the other hand, the dead bodies fall into the lower lake the story will be quite different. Because the water is so cold, the process



Viewed from above, it can be seen that about half the area of this lake is "productive area" – where the water is less than 7 metres deep and there is rapid recycling of the nutrients contained in dead plants and animals falling to the bottom.



The nutrients contained in dead plants and animals must be liberated by bacterial decay and recycled to living plants near the surface if life in a lake is to continue at the same level of abundance. This recycling is rapid if the dead plants and animals come to rest in shallow water which is warm and rich in oxygen, but very slow if they fall into the lower lake which is very cold and often poor in oxygen.

of decay is many times slower than it is in the upper lake. Furthermore, even though nutrients are released by bacterial decay in the lower lake, it is quite a while before they become available where they are needed – in the sunlit upper lake where the living algae are. You will remember that the waters of the upper and lower lakes do not mix. It is only during the spring and fall turnovers, therefore, that the nutrients released in the lower lake can be circulated up to the surface layer where they can be incorporated back into the food chain.

The upshot of all this is that if a major portion of a lake is over 7 metres deep, then a major portion of the lake's nutrients will, at any given time, be locked up in the lower lake and unavailable to the more numerous living organisms of the upper lake. The extreme case would be a deep lake with vertical walls. Such a body of water would support very few trout. The opposite extreme, a shallow lake less than 7 metres deep, would be very productive but unfortunately it would be unsuitable for trout. In summer it would have no cold lower lake for trout to retreat to and in winter the oxygen supply would be exhausted by the abundant decaying plant matter in the bottom.

Acid Rain

The low nutrient levels in Algonquin lakes have always put a severe limit on the numbers of fish and their growth. But now there is a new and much more serious consequence posed by the relative sterility of Park lakes.

The problem has its beginnings (often hundreds or thousands of kilometres from Algonquin) whenever we humans burn coal or oil, or smelt ores. In so doing, we put millions of tons of chemicals into the atmosphere each year. Most of these chemicals are eventually washed out of the air and brought back to earth by rain or snow, but some of them – particularly sulphur dioxide and nitrogen oxides – react with the rain droplets on the way down and turn them into droplets of acid. Although the rain and snow which now falls in eastern North America won't burn your skin, it is still usually between 40 and 400 times more acidic than what rain used to be. It is sobering, to say the least, to realize that most fish would die from acid shock if we put them in a bucket of rain water.

In lakes and rivers fish are normally safe from acid rain because the water contains dissolved minerals (the "nutrients" we spoke of earlier)

that quickly neutralize any acid rain that falls into them. But in Algonquin – and other areas of granitic bedrock – we know the lakes have extremely low nutrient levels and for that reason they have a correspondingly low capacity to neutralize or "buffer" the acid they now receive from virtually every rain or snow fall.

This vulnerability can put a lake at risk in two different ways. The first is that the buffering capacity of a lake may be entirely used up by repeated doses of acid rain and then, after that, more acid rain will turn the lake into a fishless vat of mild acid. This process has already occurred in thousands of lakes in Scandinavia, the Adirondack Mountains of New York State, and also in Killarney Provincial Park in Ontario. We also know of 15 acidified lakes here in Algonquin although our suspicion is that several, or even most, of these may be naturally acidic. Most are very small lakes completely or partly surrounded by very acidic bogs. A few of them are not bog lakes but it is worth noting that one (Maggie Lake on the Western Uplands Backpacking Trail) was discovered to contain no fish at all way back in the 1940's. Presumably this was well before man-created acid rain became a problem in Algonquin Park so there are good grounds for believing that Maggie Lake at least was acidified – and made fishless – for some other unknown reason long ago.

Be that as it may, there is a second way that lakes and the life in them may be damaged by acid rain. Even if a lake is not permanently acidified, it – or the top metre or two – may be temporarily overwhelmed in the early spring when highly acidic snow melts and suddenly flows into the lake. Even though the lake has enough buffering capacity to neutralize the layer of acidic surface water after a few days or weeks, this may be too late to prevent serious damage. This is particularly apparent when it is remembered that many of a lake's living creatures live in shallow places – precisely the areas that are bathed by the temporary "slug" of acidic meltwater. A lake trout spawning bed, for example, might be covered by the poisonous layer and a whole year's production of trout fry wiped out.

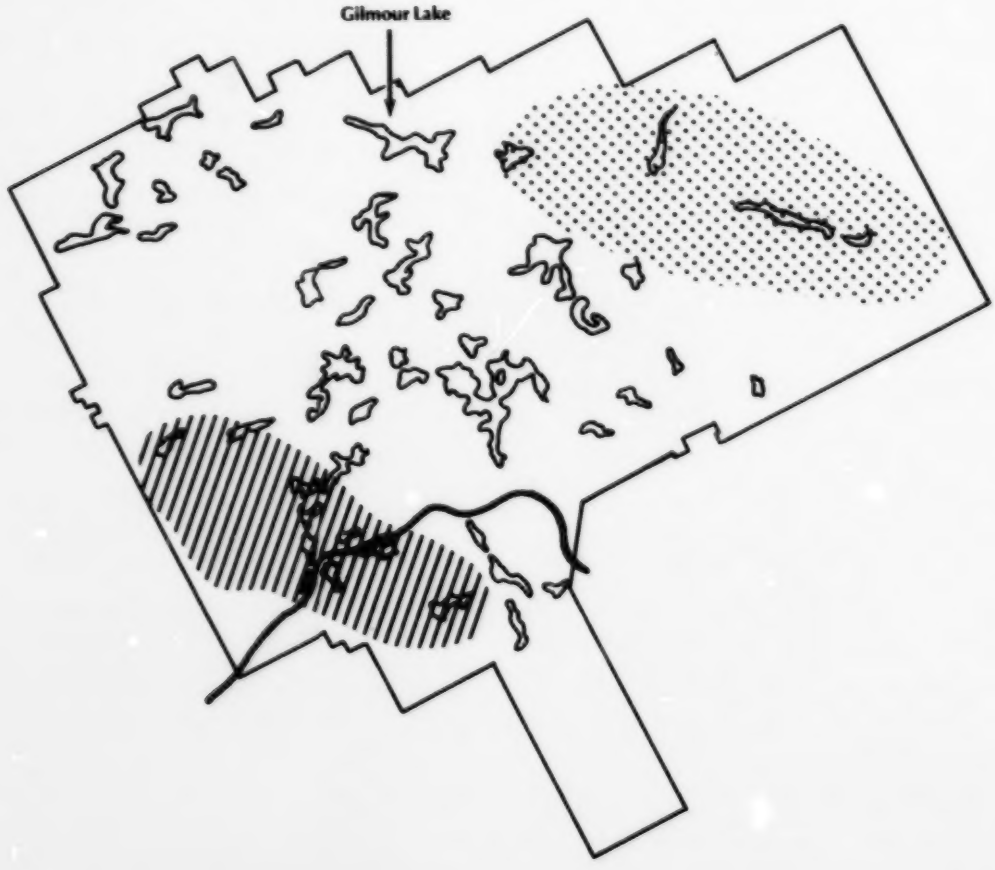
It is interesting to note that, later on, after the acid layer has been mixed with the rest of the lake water and neutralized, someone measuring the acidity of the lake might find a pH reading of, say, 6.5 (typical of Algonquin lakes) and conclude that the lake was healthy. The problem would be, of course, that the damage had already been done – by the rapid spring runoff of acid snow.

We believe that this second type of threat posed by acid precipitation is a far more serious problem in Algonquin Park than outright, permanent acidification of lakes. In this regard, the most important thing to know about a lake is not its pH, but, rather, the measure of its buffering capacity. A lake with a high buffering capacity has a good chance of neutralizing spring snow melts whereas a lake with a low buffering capacity is correspondingly more likely to be temporarily overwhelmed by the sudden acid inflow and to suffer damage from the resulting layer of acid surface water.

Scientists divide lakes into five "levels" according to their buffering capacities and it is instructive to see how Algonquin Park lakes fare in this classification, particularly because the sensitivity of our lakes ties in very strikingly with the underlying geology of the Park.

Of 604 lakes surveyed up to 1984, fifteen, mostly at high elevations in the Park's southwest corner, were classified as Level 1 or "acidified" as described above. At the other end of the scale, one lake was determined to be at Level 5 (high buffering capacity and total insensitivity to acid rain). This is Gilmour Lake lying on the limestone floor of the Brent fossil meteorite crater on the Park's north boundary. Another 61 were found to be at Level 4 (low sensitivity) and most of these are in the lower elevations of the Park's east side and often associated with major fault zones that are known to have a certain amount of calcium carbonate (source of a major buffering agent).

Most of the lakes in Algonquin (387 out of the 604 surveyed) are considered as Level 3 (moderately sensitive) and they probably experience damage only in years of extremely rapid snow melt. They tend to lie in the middle elevations of the central area of the Park.



Of 604 Algonquin lakes tested up to 1984, 389 (64%) were found to be "moderately sensitive" to acid rain. Only 15 (2.5%) were considered acidified but another 138 (23%) were found to be extremely sensitive, meaning that they probably experience biological damage each year in the spring runoff period. These lakes are concentrated in the highlands (cross hatched area) straddling Highway 60 in the Park's southwest corner. Another 61 lakes (10%), mostly at lower elevations in the northeast part of Algonquin (stippled area) have low sensitivity. Gilmour Lake, lying on the limestone floor of the Brent fossil meteorite crater near the Park's north boundary is the only Algonquin lake that is totally insensitive to acid rain.

Of greatest concern are the 138 extremely sensitive Level 2 lakes. These include many large, well-known lakes such as Louisa, Butt, Tim, McIntosh, Pinetree, and Little Otterslide. Generally speaking, they lie in a broad band stretching across the Park's southwest corner and straddling the Highway 60 corridor. This is a headwater area (along the height of land separating the Georgian Bay and Ottawa River watersheds) with very thin soil and, of course, no upstream areas that might contribute buffering chemicals to the lakes found there. This is why the 138 Level 2 lakes have such a limited ability to neutralize acid and why they are so vulnerable to sudden acid shocks.

There is no doubt that the top metre or two of these extremely sensitive lakes is rendered lethal for some time each spring and there is good reason to expect biological damage. Fish losses due to acid precipitation may have already been observed, in fact, in Westward and Delano Lakes, two extremely sensitive (Level 2) bodies of water not far from Highway 60. These lakes have declining populations of white suckers and lake trout respectively, with no young fish present at all. Efforts to link these declines with acid rain have not yet turned up any incontrovertible evidence, however, so the connection between the two remains unproven, only suspected. Another possible effect of acid precipitation is that the temporary, partial acidification of lakes causes mercury to enter the food chain and contaminate fish (particularly large ones) to the point where they are unfit for human consumption. (See the last page of this book for a list of affected lakes in Algonquin.)

Notwithstanding the stress imposed on Park lakes by acid rain, it is worth pointing out that the picture is less gloomy than we thought it was just a few years ago. Then, it was widely believed that most or even all our Park lakes were on the road to permanent acidification. Studies since that time, however, have shown that it is really only the extremely sensitive lakes (i.e. 23% of those tested) that are at risk and even there most of the danger is associated with the temporary springtime "acid shocks". The permanent loss of buffering capacity in these lakes (which could eventually lead to their outright acidification) is a very slow process and may be coming a bit slower because of recent efforts to control air pollution. This is encouraging but we must not lower our guard. If governments were to relax current pollution standards our rain and snow could quickly become more acidic than they already are and many lakes in Algonquin and elsewhere could be pushed over the delicate brink they are now poised upon.

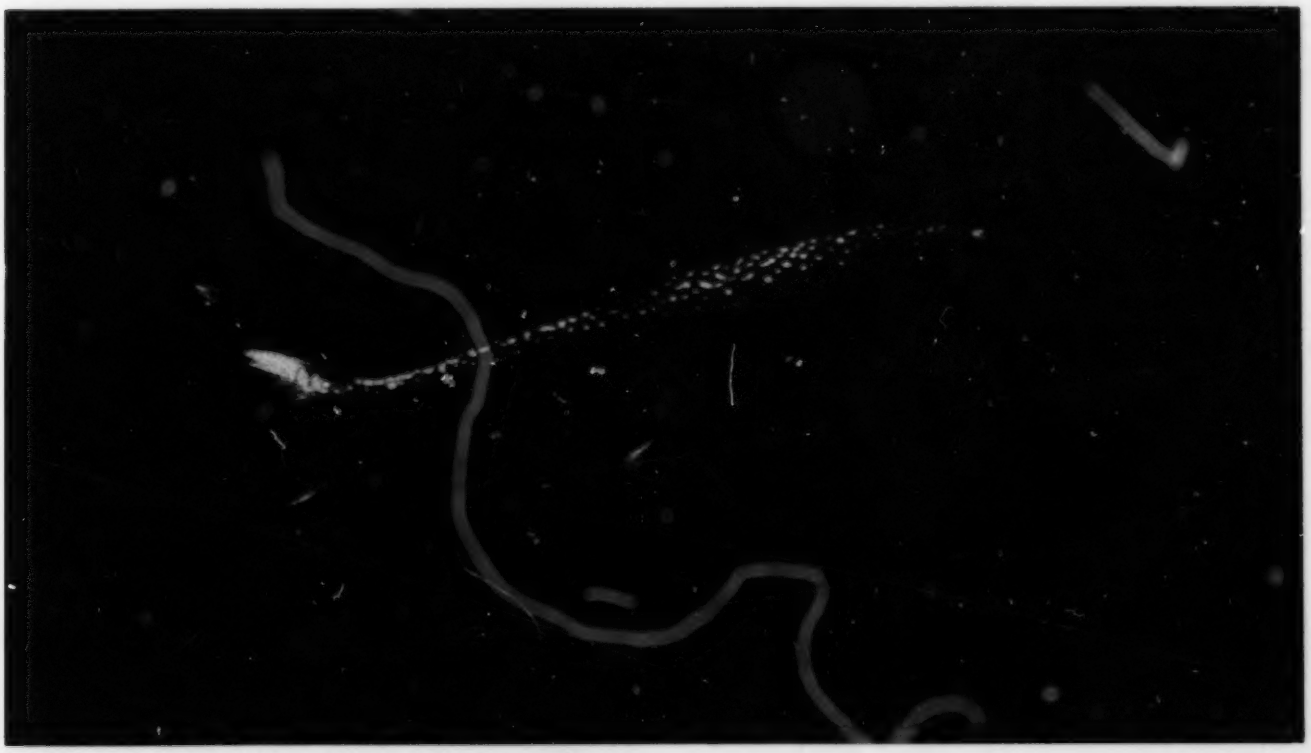
Lake Trout

Description – The lake trout has a longer, more slender shape than our other trout. Many light-coloured spots on a background of gray with a hint of green give it a distinctive mottled appearance. There are never any red spots as in brook trout, although the fins often have a tinge of orange. A particularly good identifying mark is the deeply forked tail fin.

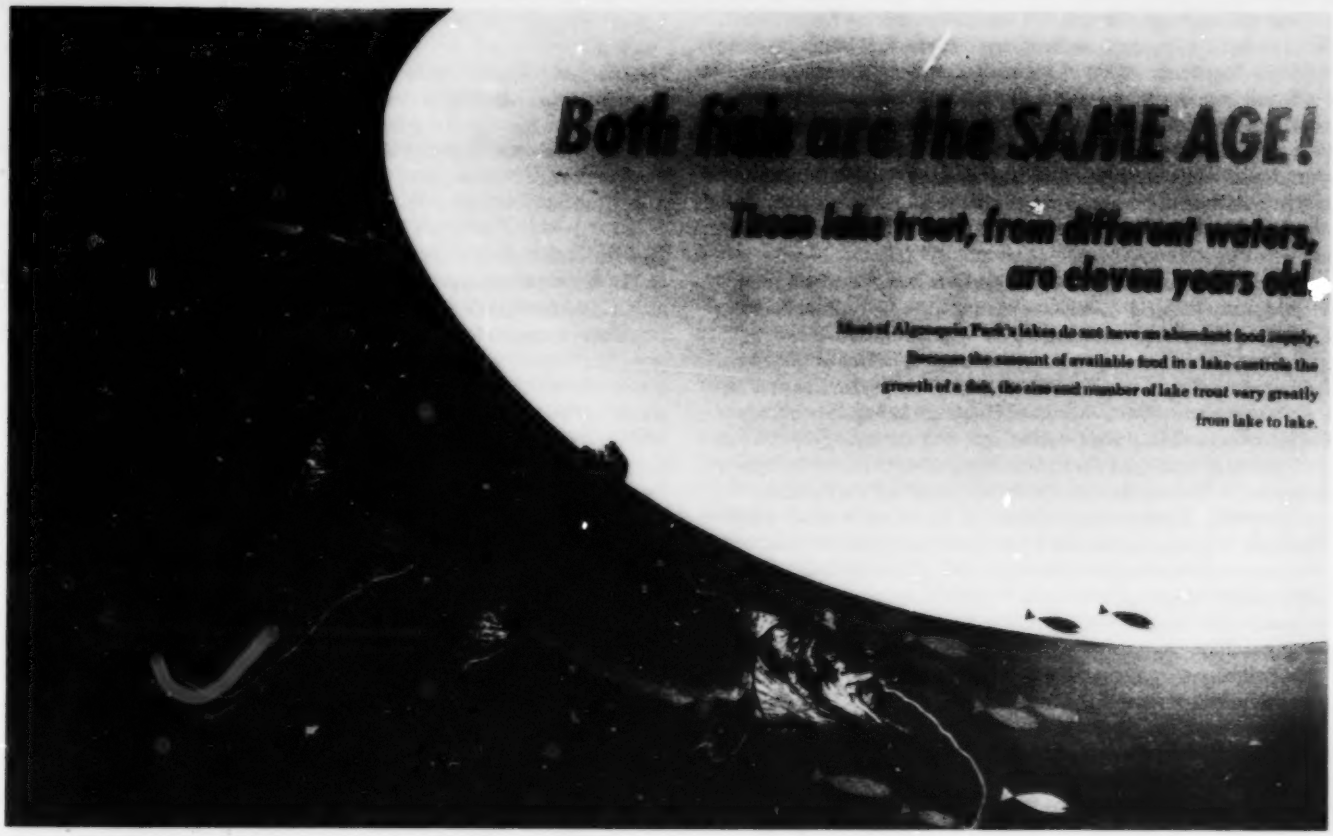
Distribution – Many people tend to take the lake trout for granted as a familiar and widespread fish. In fact, lake trout are found in only about 2000 lakes in Ontario (less than 1% of the total) and even these populations are gradually disappearing before the onslaught of man's activities. Here in Algonquin, lake trout occur in about 150 lakes – almost every large one and many smaller ones as well, even down to the size of 25 hectares. The quality of fishing varies from those lakes where an experienced angler might catch three trout in an hour, to those where you would be fortunate to take one in 10 to 15 hours of fishing. In Lake Opeongo, the largest and most heavily fished lake in the Park, approximately 1000 lake trout are usually taken every year at an average catch rate of one fish for every seven hours of fishing.

Yearly Cycle – Being a cold water fish, the lake trout is strongly influenced by the annual temperature events within the lake. During winter, when the whole lake beneath the ice is at a uniform 0 to 2°C, the trout can go almost anywhere and can prey on any smaller fish and bottom insects that are available. Generally, however, half of all lake trout sampled in the winter have empty stomachs indicating that there is little active feeding – probably because both the trout themselves and their prey are less active in the cold water under the ice than at other seasons. When the ice goes out in late April or early May, lake trout have their most active feeding period of the year. The water is still very cold, but life is beginning to stir again and the lake trout have access to, and prey heavily upon, minnows, crayfish, mayfly nymphs, in shallow areas of the lake and even on flying insects at the surface.

When the warm upper lake is established in June, the lake trout are forced into the deeper, and still cold, waters far below the surface. Because they are largely cut off from the warm upper lake and its abundant insect and minnow populations, most lake trout in summer are forced to subsist on the relatively sparse prey found in the cold



The lake trout is an inhabitant of deep, cold waters. Although reasonably common in Algonquin, this large predatory fish is fast disappearing from many areas of its range.


Both fish are the SAME AGE!
These lake trout, from different waters, are eleven years old.
Most of Algonquin Park's lakes do not have an abundant food supply. Because the amount of available food in a lake controls the growth of a fish, the size and number of lake trout vary greatly from lake to lake.

The types of food available to lake trout make a dramatic difference in their growth. Both these fish were eleven years old when caught but the one on the left (from Lake Louisa) had been forced to subsist on tiny aquatic animals. The larger fish (from Opeongo) had had access to perch, whitefish, and cisco.

lower lake – bottom-dwelling insect larvae, tiny floating plants and animals, and the occasional forage fish such as perch that ventures down from the warm waters above. It is only in those lakes which happen to have deep-water forage fish like whitefish or ciscoes that lake trout can regularly eat fish during the summer months.

With the colder days of late summer and early fall, the warm upper lake cools off and lake trout can once again hunt in the more productive surface waters. Generally speaking, however, it is only the smaller, immature lake trout that avail themselves of this renewed accessibility of abundant food. The larger, mature trout eat less and less as they prepare to spawn.

Spawning – Lake trout spawn at night in the fall, in Algonquin usually during the last two weeks of October. The spawning beds, to which the same individual trout generally return year after year, are rocky shoals one to three metres below the surface. Before spawning, the female trout may clean the area by brushing the rocks with her body or tail fin, or by rubbing them with her snout. The eggs (about 3500 from a 2 kilogram female) are released by the female, fertilized by the nearby male, and drift down into the crevices of the rocky bottom where they remain until hatching some four to six months later in late February to April.

Growth –After hatching in March, young lake trout fry remain on the spawning beds until the ice breaks up in late April or early May. Very little is known of their first few years of life because they are too small to be caught by normal fishing methods. There is some evidence that they live deeper than larger lake trout and that they tend to stay close to boulder areas – possibly to escape being eaten by older fish.

The growth rates of young lake trout vary tremendously from lake to lake. For example, in Lake Louisa a seven-year old trout is usually 35 to 38 centimetres long whereas in Redrock, a lake only half the size of Louisa, a seven-year old is usually 43 to 46 centimetres long. The reason lake trout grow so slowly in Lake Louisa is that this is one of the many lakes in which lake trout, when confined to the cold lower lake in summer, have no access to smaller forage fish and are forced to eat near-microscopic algae and small deepwater crustaceans. In other lakes like Opeongo, the trout, though still confined to the lower lake, can eat fish such as perch, ciscoes, or whitefish with the result that they grow much faster.

About half of Algonquin's lake trout lakes have populations that are forced to subsist in summer on tiny animals, and the average weight of the fish caught is 700 to 900 grams. Although such fish are significantly smaller than lake trout of similar age from lakes where forage fish are available, they are more numerous. In fact, whether a lake has many small lake trout or fewer larger ones, the total weight of all the fish together for each unit of area, seems to be about the same in both cases.

More importantly, the total growth of all these fish, in terms of kilograms grown per hectare per year, is also the same whether the fish are big or small. The figure for annual growth of lake trout flesh in Algonquin lakes is very small – at the most only about 560 grams per hectare per year. In other words, if you catch a lake trout weighing 1700 grams you are removing an amount of lake trout flesh equal to the maximum annual production of three hectares. This does not mean that there are no fish left in those three hectares but it does mean that if you (or anybody else) were to catch more fish from that area during the same year, you would be consuming the supply faster than it can be replaced.

Because the annual growth or production of lake trout in Algonquin lakes is so low it is very easy for even apparently moderate fishing pressure to remove each year more than the annual growth of fish – with the obvious result that fishermen eat into the "working capital" and the fishery declines. This is particularly likely to happen where access to the lake is easy as, for example, with the several large lake trout lakes along Highway 60. Data gathered by the Fisheries Assessment Unit and the Harkness Lab do illustrate, in fact, that the lake trout stocks of Smoke Lake and Lake Opeongo (and presumably those of other similar lakes along the highway) are being overexploited by fishermen.

In the past, similar recognition of the vulnerability of lake trout to heavy fishing pressure led to the prohibition of winter fishing in

Algonquin. Winter fishing, using different methods, can be much too effective in catching lake trout – especially in small lakes – and may take many more fish than are caught in summer. In addition, winter fishing takes much smaller fish and heavily exploits immature stock that has not yet had a chance to spawn.

The Fish You Catch – Lake trout generally start to be caught at five years of age, and it is six, seven and eight year-olds that usually make up the major part of the catch. This is true whether the trout are large individuals that feed on fish or smaller trout subsisting on tiny animals, and points out a problem with setting catch limits. The present daily limit is three lake trout, but on Lake Louisa this is more likely to mean three small plankton-feeders each weighing about 800 grams for a total of 2.4 kilograms, and on Lake Opeongo it may very well mean three larger fish-eating trout each weighing about 2 kilograms for a total of 6 kilograms. Both catches are legal but since the productivity of both lakes is about the same, the successful Opeongo fisherman is taking much more from the lake than is his or her counterpart on Lake Louisa. This disparity is one reason why a catch limit expressed in terms of total weight or total length (rather than in individual fish) might be a better system.

Whatever the lake, however, the quality of fishing depends heavily on fish of two or three different age groups. In Lake Louisa, for example, a large proportion of the lake trout caught every year are six year-olds and seven year-olds. Fish of one age are referred to as a year class and it became very apparent in the early days of creel surveys in Algonquin that the numbers of surviving fish in each year class varied considerably. The quality of fishing varies correspondingly as the fish of each year class became big enough to catch. To continue with the Lake Louisa example, fishing will be good this year if the year classes of six and seven years ago are strong and, similarly, it will be poor if very few fish resulted from the spawnings of six and seven years ago.

No one knows for sure why year classes vary so much from year to year. There may be variable losses of eggs in some lakes due to yearly differences in the water level and in scouring of the spawning beds by ice, but weather can possibly be eliminated as a direct factor since year classes in neighboring lakes may be strong or weak in the same year. Variable predation of the eggs (chiefly by round whitefish, brown bullheads and crayfish) is not believed to be important either, but researchers have observed that in some years many of the eggs are infected and killed before they hatch by a fungus called *Saprolegnia*. If (and it's a big "if") these infections are responsible for poor year classes they might help account for poor fishing six or seven years later.

At one time it was also believed possible that the strength of year classes varied so much because so many potential spawners were caught by fishermen that the few survivors were unable to produce the necessary number of eggs for a strong year class. If this were true, it was reasoned that closing a lake to fishing in alternate years would allow all the fish that become large enough to catch in the closed year to grow, reach maturity and spawn before being exposed to fishermen the following year. A large number of lakes were managed under this alternate closure plan, as late as 1975, but the results showed that there was no detectable link between closed years and strong year classes – at least under the fishing pressures then prevailing – and the plan was discontinued.

Fishing for lake trout.

Brook Trout

Description – Brook trout (often called speckled trout) are a dark, olive-green on the back, usually with lighter green, wavy lines. The sides are lighter, with many pale spots and smaller red dots surrounded by bluish halos. The belly is white and the reddish fins have creamy white leading edges. The tail is almost "square" with little or no fork.

Distribution – In spite of its name, the brook trout in Algonquin is not usually found in streams. Since most of them carry the warm outflow of lakes, Algonquin streams are generally unsuitable for brook trout, although there are exceptions, especially those having deep holes and frequent, spring-fed feeder streams.

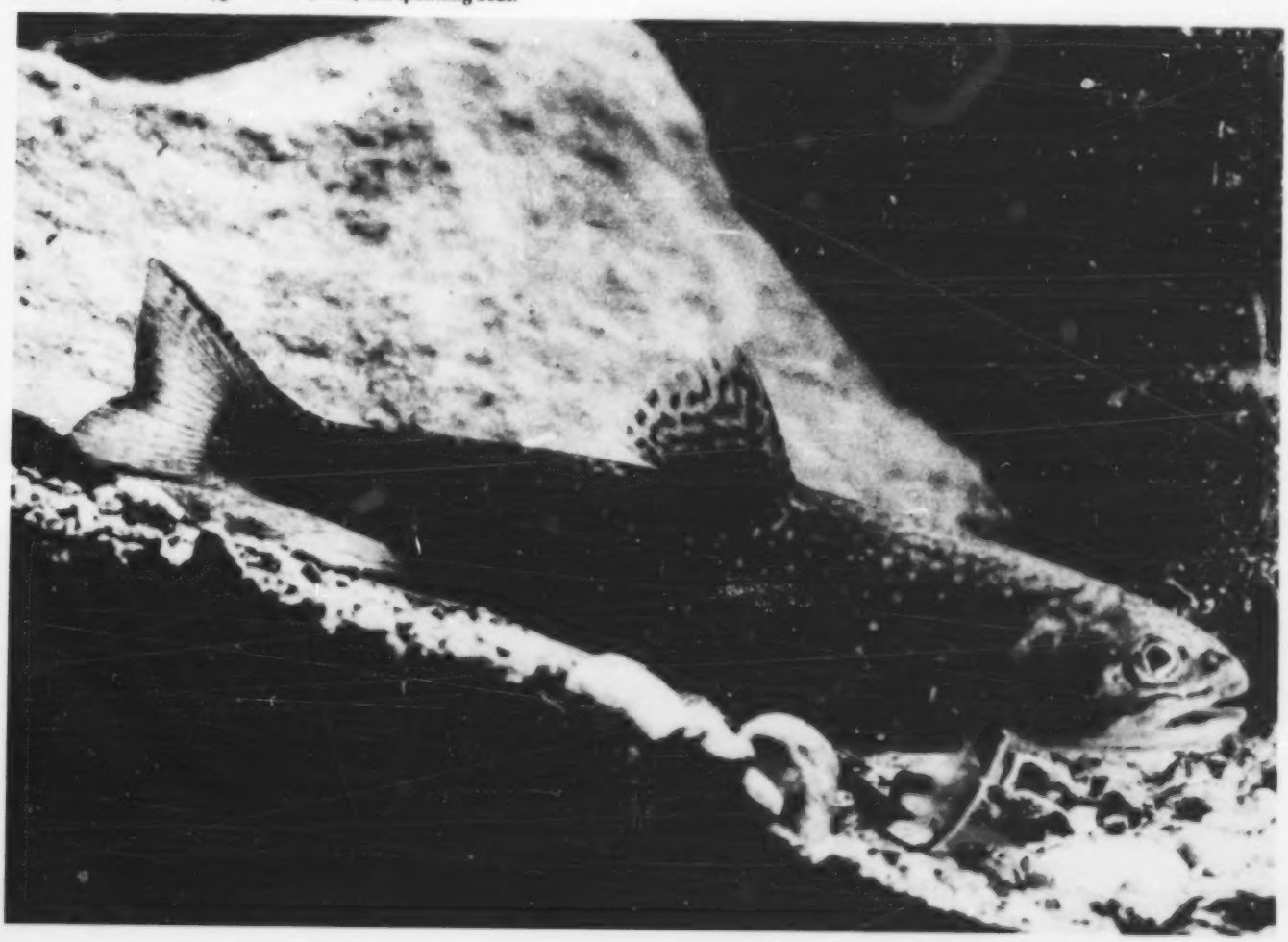
The real habitat of brook trout in Algonquin is lakes, and at least 230 contain native populations. Dickson, Lavieille, Redrock, Proulx, Big Crow, Welcome, Harry, and Stringer Lakes are examples of good brook trout lakes where fishing quality may average between one and two trout per hour of fishing (in May and June). The average length for the season's catch in these lakes is between 30 and 38 centimetres.

Yearly Cycle – As with lake trout, the annual cycle of physical events in a lake has a great influence on the life of a brook trout. In winter, and on into May, Algonquin lake water is uniformly cold from top to bottom and brook trout can move freely throughout the lake. Fishing is best in May because the trout can and do live near the surface and in shallow waters where insects and minnows are most abundant. The development of the warm upper lake in June, however, forces brook trout into deeper, colder waters because of the considerable stress they experience in water warmer than 20°C. This sets an upper limit on the part of the lake they can inhabit during the summer. Another, lower limit is also set by the brook trout's requirement for water containing more than 5 parts per million of oxygen. In many shallow lakes the non-renewable supply of oxygen in the cold lower lake falls below this figure later in the summer and the brook trout are therefore confined between the invisible but nonetheless real barriers imposed by lethally warm water above and lethally oxygen-deficient water below. Thus, for much of the summer, brook trout live in and near the transition zone between the upper and lower lakes in a volume of water, often called "trout water", where living conditions permit this demanding species to live. In natural brook trout lakes trout water averages about 43% of the lake's total volume, and extends from about 3 metres to about 12 metres below the surface.

Although brook trout do not live in the shallow areas of a lake in the summer, these areas are nevertheless quite important for brook trout. During the summer, the warm temperatures of the shallows encourage far more growth of plants, insects, and minnows than is possible in deeper, colder water. In fall, winter, and spring, when brook trout can live in the shallows, they reap the benefits of this summertime food production and, not surprisingly, most good brook trout lakes have significant areas (up to 20% of the lake) that are quite shallow.

In the summer, however, it doesn't do brook trout much good if there are lots of insects and minnows near the surface. There must also be fish like perch that regularly venture down into the areas where the trout are confined. We do, in fact, find that most native brook trout lakes have perch or a complex fish community that can support the predatory trout even in summer.

Despite its name, the brook trout in Algonquin is more often found in small to medium-sized lakes – provided that they meet this species' exacting requirements in temperature, oxygen content, food, and spawning beds.



Eggs of trout (in this case splake) hatching in a Ministry of Natural Resources hatchery. Note the large yolk sacs of the young hatchlings.
(Photo courtesy of A. Berst).

Spawning – Even when a lake has the right kinds of food and physical conditions, there is still no guarantee that brook trout will be able to live in the lake permanently. The trout must be able to reproduce, or spawn, and here they have very exacting needs.

Brook trout spawning beds are gravel or sand areas, one or two metres below the surface, with an upwelling of spring water coming up through the bed. Such specialized requirements are not at all common and, indeed, many otherwise quite suitable lakes have no brook trout spawning beds – and therefore no brook trout. Although their stringent spawning requirements have prevented brook trout from colonizing and occupying many Algonquin lakes, it is an interesting observation that those same spawning bed features may afford brook trout a unique chemical haven against spring acid shocks. The spawning beds of brook trout, especially in very sensitive lakes with low buffering capacity, may be bathed for a few days or weeks each spring by highly acidic surface water resulting from the rapid snow melt. Normally this exposure would be deadly to the young trout fry still in or near the spawning beds but they may be saved by the fact that the spring water welling up through the spawning bed has a much higher buffering capacity than the lake water just above. It is a fortunate coincidence indeed that the spawning behaviour of brook trout, having evolved long before acid rain became a problem, now quite fortuitously may provide protection against this modern, man-made threat.

Spawning takes place from late September to November, during the daytime (unlike lake trout which spawn in October at night). As spawning time approaches, the colours of the brook trout are greatly intensified, especially in the males whose flanks and belly become orange-red with a black stripe along each side. Indeed, one of the finest sights any Park visitor can hope to see is hundreds of brilliantly coloured brook trout milling around on a spawning bed on a bright fall day. Each spawning female digs a shallow nest in the gravel, deposits her eggs there and, when they have been fertilized by a closely following male, she covers them over with gravel. Thus hidden from the eyes of predators, the eggs have a much better chance of completing their development over the following four to six months.

Growth – Surviving brook trout eggs hatch sometime from February to April, depending on temperature and oxygen conditions, still buried in their gravel spawning beds. They remain there absorbing their yolk sacs, and only emerge into the cold, dim world beneath the ice a month later.

Although they are tiny, young brook trout (particularly those in lakes) grow much faster than young lake trout. A two year-old in Dickson Lake, for example, is between 23 and 30 centimetres long, a three year-old is a little over 35 centimetres, and a four year-old about 40 centimetres. Some individuals are sexually mature when two years old, and all are mature by the time they are three. Very few live to reach eight years of age.

Although individual brook trout grow much faster than individual lake trout, they are usually much fewer in number so that a lake's annual growth of brook trout flesh (of all the trout combined) is in the same low range as that shown by lake trout. The long term creel survey of Redrock Lake, for example, has shown that its annual yield of brook trout flesh is only about 560 grams per hectare – which is less than one hundredth the yield of certain ponds in limestone areas of southern Ontario. However well individual brook trout grow in suitable Algonquin lakes like Redrock, there is no getting away from the ultimate factors which operate to severely limit the total number of fish that can be supported in Park waters – the short growing season, the low nutrient level, or sterility, of the lakes, and the relatively limited extent of each lake's productive area (the parts that are less than seven metres deep).

The Fish You Catch – Most brook trout fishing in Algonquin is in May and June because those are the months the trout are at the surface and actively feeding. In many lakes it is not unusual for 75% or more of the year's total catch to be taken in the first two weeks of the season. As spring advances into summer there is a steady decline in the number and size of the fish caught. Not only are the trout moving deeper and becoming less accessible, but also there are fewer of them. In Dickson Lake, for example, fully half of the mature stock is taken by fishermen each year – most of this removal taking place early in the season.

As with lake trout, most of the season's catch is made up of only a few year classes. In the case of brook trout, the fish caught are mainly two and three year olds in some lakes or three and four year olds in others, and the fishing quality in a given year varies greatly with the strength of the two relevant year classes. To give one very early, but still instructive, example, the year class strengths (or numbers of fish hatched and eventually reported by fishermen) in Redrock Lake from 1944 through 1947 were 350, 569, 185, and 224 fish respectively.

Researchers have sought to discover reasons for such wide variation but to date no convincing explanation has been given. The survival of eggs on closely observed spawning beds has only ranged from 65 to 75%, but an important and variable factor affecting egg survival may be the groundwater seepage into the spawning beds. In winter, the seepage water is warmer than the lake water, a property which should hasten egg development, but it is also low in oxygen, which might retard their growth or even kill them. Slight year to year shifts in the volume, temperature and oxygen levels of spring seepage water may therefore be quite important.

Because year classes were observed to fluctuate so markedly and because so many mature fish are taken in even moderately fished lakes, it was once reasoned that closing lakes to fishing in alternate years would permit many more fish to survive the closed summer, to spawn and therefore to contribute to a much stronger year class. As with lake trout, however, the results showed that year classes originating in open years were just as strong as those originating in closed years. This may well be a reflection of the fact that, in some lakes at least, annual production of young trout is limited by the small extent of suitable spawning areas. Whenever this is true, relatively few fish will be quite sufficient to saturate the spawning beds and nothing is accomplished by extra spawners except that the first laid eggs are stirred up and destroyed when later fish prepare to lay theirs. In other words, extra spawners do not add to the total number of eggs in the spawning bed and it does not matter, as far as year class strength is concerned, if the extra spawners are caught by fishermen.

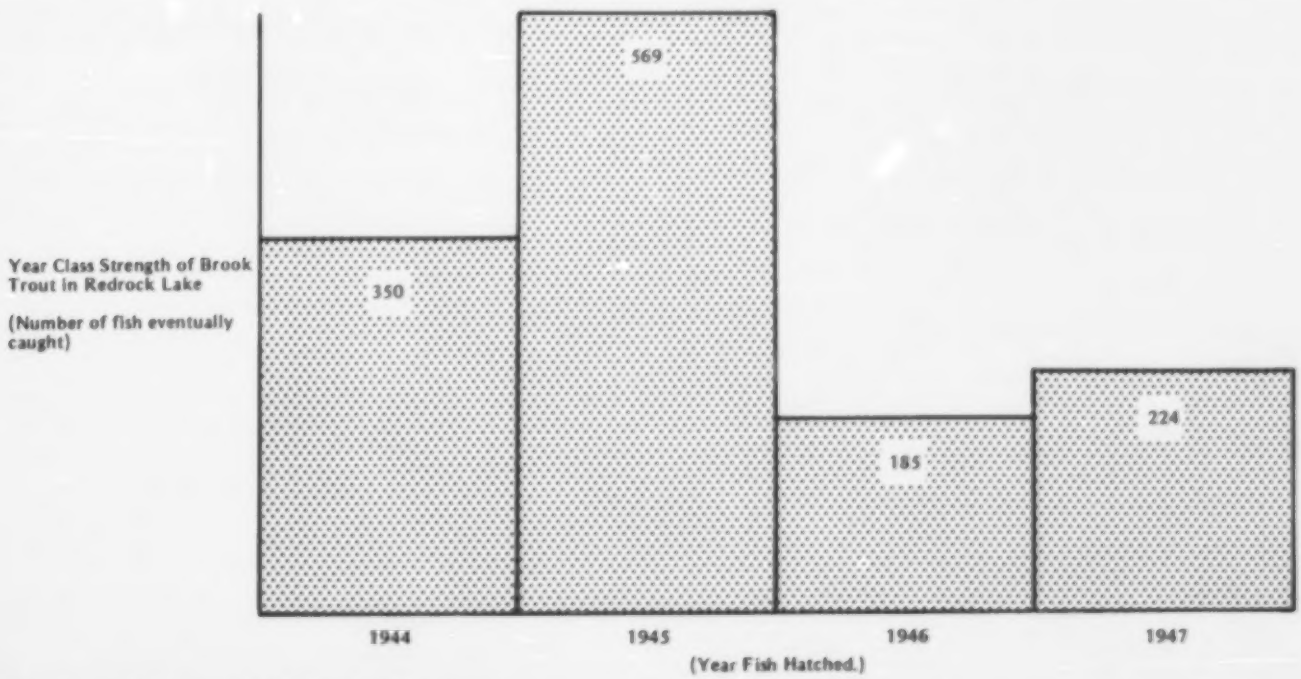
Smallmouth Bass

Distribution – Except for a few waters on the far east side of the Park, smallmouth bass populations in Algonquin are all the result of deliberate introductions by man. The first of these was made as early as 1899 and, today, at least 79 lakes (about half of them near Highway 60) support bass fisheries. The most important of these is Lake Opeongo where from 200 to 1500 bass are taken each year, at about one fish for every three hours' fishing time.

There is reason to believe the introduction of bass may have destroyed brook trout fisheries in some lakes, but there is no evidence that lake trout have been affected. This probably stems from the fact that in the summer months when lake trout are confined to the cold lower lake, bass inhabit the warm upper lake. Also, about 80% of the bass' diet is crayfish (at least in Opeongo), and very few perch or insects are eaten, reducing even further the possible competition between the two. The fact that bass remain near the surface during the warm months makes them readily available to casual summer fishermen at a time when trout are down deep and difficult to catch.

Spawning and Year Classes – The smallmouth bass presents another major difference from trout in its manner and season of spawning. In late spring or early summer (not in the fall), the male builds a shallow nest from 0.3 to 1.8 metres in diameter in 1 to 6 metres of water on a sandy, gravelly, or rocky bottom. After spawning, the female leaves but the male remains close by and guards the nest. In the relatively warm temperatures of most nest locations, the eggs hatch in as little as 4 to 10 days, and the 2000 or so young bass fry continue to be guarded by their father for up to three weeks.

With such a short "incubation" period and the benefit of parental protection, bass fry might seem to be better assured of success than trout fry. In reality, the bass populations in Algonquin lakes show dramatic fluctuations due to wide variations in year class strength. The problem stems from the fact that the smallmouth bass is a warm-water, southern fish not really well adapted to the short summers and long cold winters prevailing here in Algonquin. Young bass hide in rock crevices during the winter and do not eat at all. Whether or not they make it through until spring depends on their size at the onset of winter – and that depends on how well they have done the previous summer. If the season has been warm and the initial nesting attempts of adult bass have not been destroyed by storms, then the resulting bass fry will have had an early start and good growing conditions so that they will have reached or passed the critical minimum size for



Year class strength (the number of fish hatched in the same year) can vary greatly from year to year, as shown in this diagram for Redrock Lake from 1944 to 1947. The reasons for these fluctuations are poorly understood.

Although there are a few native populations of smallmouth bass in the extreme south and east of Algonquin, most of the bass in the Park are here because of introductions made around the turn of the century.

winter survival by the end of their first summer. If nesting has been late, however, and especially if the summer is cool, most of the young bass may fail to reach the critical minimum size and they will therefore fail to survive their first winter. In part because of this great uncertainty in year class survival, the long term production of bass in Algonquin is quite low. In Opeongo, for example, the average yield has been just over 100 grams of bass flesh per hectare per year.

At one time there was a 10 inch (25.4 centimetres) minimum size limit on smallmouth bass which meant, in heavily fished lakes like Cache Lake, that almost all bass were caught in the first summer they reached this length, at about three years of age. In other words, almost all the fishing each year was provided by a single year class and when this year class was weak or non-existent as in 1946, for example, the fishery in the lake completely collapsed.

The aim of the minimum size limit was to protect immature fish until they could spawn at least once but, in addition to making for highly variable fishing quality, the size limit occasionally had another very undesirable effect. In some lakes, due to overcrowding or other unfavourable conditions, young bass grow very slowly. In Provoking Lake, for example, bass do not reach 25 centimetres in length until their fifth year – and relatively few of them lived that long. Some improvement was achieved by removing bass to thin out the population and allow better growth of the remaining fish. But a similar result was achieved by removing the minimum size limit and allowing the angler to keep the small fish he caught. This had the added benefit of taking the pressure off the larger fish and allowing some of them to live much longer, and reach much larger sizes than they otherwise would have done.

Other Introduced Game Fish

Exotic Species – In the past, a number of non-native game fish including Masu Salmon (a Japanese species), Atlantic Salmon, Brown Trout, Arctic Char, and Grayling were introduced to various Algonquin lakes. Given the failure of many plantings of even native species, it is not surprising that these attempts to establish exotic species in the Park did not succeed.

It is perhaps fortunate, also, that they did not succeed since there might well have been unforeseen and undesirable consequences to native trout and other organisms. This concern is especially important in a provincial park like Algonquin whose aims include the preservation of its indigenous wildlife community. When you stop and think about it, fish and other supposedly "lowly" aquatic organisms are just as much a part of that community as deer or chipmunks – even if they are less visible and appealing to us humans.

Present Day Fisheries Management in Algonquin

In 1974, the Ontario Government, in an effort to reconcile the many conflicting demands imposed on Algonquin, and after several years of study and public input, released the Algonquin Park Master Plan. The Plan established the basic philosophy to be followed by the future development and management of the Park.

The Plan recognizes that the wilderness quality of Algonquin's waterways is a major part of the angler's experience, and that the basic strategy of fisheries management should be to provide opportunities for high quality angling for native sports fish – catching wild fish in a wilderness environment. This rules out future plantings of exotic, non-native game fish such as rainbow trout.

Although warm water fish such as walleye, muskie, and smallmouth bass are recognized as legitimate parts of the Algonquin Park fishery in the relatively few waters where they now occur, they will certainly not be assisted in spreading farther and the emphasis of fisheries management in Algonquin will be on the preservation of, and high quality angling for, our native stocks of brook trout and lake trout.

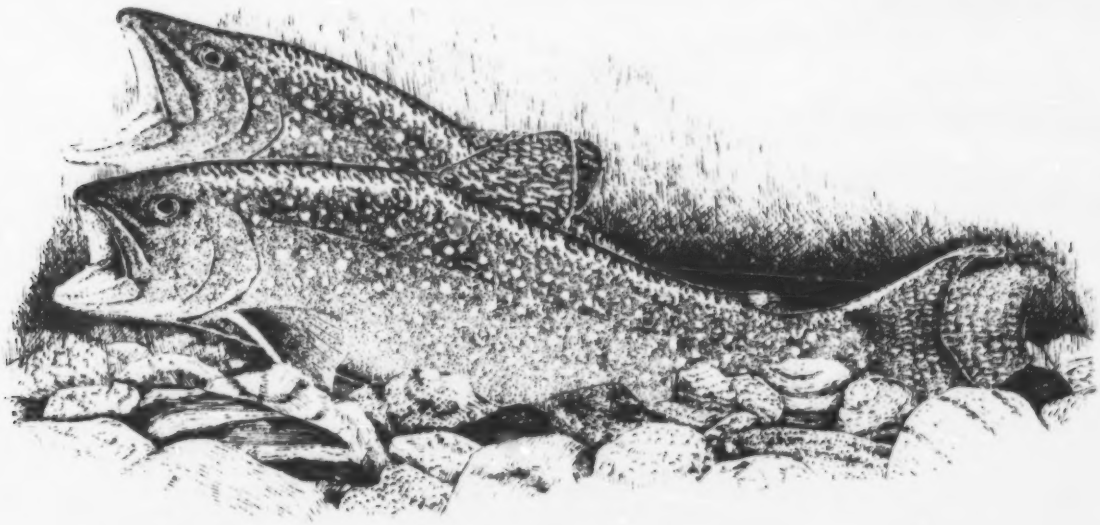
The precise nature of trout management in the Park depends a great deal on the park zoning established by the Master Plan. In the Park Interior (that is, anywhere except in Development Zones) fisheries will be managed, without stocking, through the enforcement of the Ontario Fishery Regulations.

In the Highway 60 Development Zone, because of the much easier access and consequently much higher fishing pressure, a more intensive sort of management is permitted. For example, where expected results can justify the costs, stocking, the creation of special splake fisheries, or environmental improvements may be considered.

Regulation of the Fish Harvest – The principal, and often the only practical, means of assuring that Algonquin will continue to provide high quality fishing for native trout is limiting the number of fish caught.

By now, it should be clear to everyone that, even if the lakes of Algonquin Park produce beautiful trout, the quantities are very modest indeed. With tremendous numbers of visitors and a distinctly limited capacity for growing fish, Algonquin Park simply cannot be a "fish factory". With appreciation of this basic fact and a desire on the part of Algonquin fishermen to preserve a magnificent resource, however, the Park can and does provide thousands of opportunities to top off a perfect day in wild surroundings with a delicious meal of wild trout. The only requirement is that everyone use the resource sparingly and share it with others. To accomplish this simple aim and be fair to everyone we have placed restrictions on the seasons when fishing may take place, on the gear that may be used, and on the numbers of fish that may be caught and possessed.

A fisheries biologist "stripping" eggs from a two kilogram female lake trout on Smoke Lake. About 6000 deep orange-gold eggs were taken from this female and fertilized with milt taken from a male caught at the same location. The resulting fry, raised in a hatchery, were to have been planted back into Smoke Lake in the hopes that they would survive better than standard hatchery stock.



Splake in the act of spawning. As soon as the female (in the foreground) has deposited her eggs, the closely following male releases the milt which fertilizes them. This drawing was made from photographs taken in Jack Lake – the first place where splake were observed to spawn in nature. ***(Drawing by Howard Coneybeare).***

To date, these regulations, combined with the relatively difficult accessibility of lakes in the Park Interior have been sufficient to preserve the fish stocks and high quality of fishing in most of Algonquin Park. In the Highway 60 Development Zone, however, the much easier access has led to problems. For example, as of this writing, it is recognized that the lake trout fisheries in Smoke Lake and Opeongo Lake (and presumably in other less well studied lake trout lakes along the highway as well) are being overexploited by fishermen. In order to preserve these stocks, therefore – and the fishing opportunities they afford – some sort of additional special fishing or access restrictions may have to be imposed.

Stocking – In the minds of many fishermen, the easiest and most efficient way to assure the survival of heavily exploited trout fisheries – or to create altogether new ones – is to plant thousands of hatchery raised trout in the appropriate lakes.

The unfortunate facts of the matter are, however, that stocking is always extremely expensive, often produces almost no catchable fish, and sometimes actually does real damage. These facts need to be recognized by anyone who may have thought that stocking is the magic solution to all our fisheries problems.

Take for instance the lake trout overexploitation problem in Smoke and Opeongo lakes. It might seem that, instead of restricting the fisherman, the way to solve the problem would be to stock however many extra lake trout it would take to keep good fishing. The trouble is that the idea has already been tried and it failed miserably. Between 1948 and 1964, 158,000 yearling and 51,000 fingerling lake trout were planted in Lake Opeongo. Only 25 (about 0.01%) were ever caught. At today's prices the Opeongo plantings would cost more than $30,000 – or over $1,000 for each recovered fish! But even if the stocking had worked we might have achieved a very undesirable result. Instead of merely supplementing the native Opeongo lake trout stocks, we might very well have swamped and diluted them to the point where the natural strain no longer really existed. We would have destroyed a wild strain of lake trout, finely adpated to Opeongo conditions, and replaced it with a domestic, hatchery-reared variety much less able to get along without our help than was the original victim of our good but misguided intentions.

Results from brook trout plantings have been similarly discouraging. In one seven year period, for example, approximately 212,000 brook trout yearlings were planted in 35 larger Algonquin lakes. Creel census returns showed absolutely no recoveries of the planted fish.

Returns have been recorded from brook trout plantings made in smaller lakes, but even here the success has been spotty, ranging from almost nil to about 30 percent. Many different factors such as planting methods and the strain and size of the stock have been investigated, but the one that seems to make the greatest difference is the type of fish community that is already present in the planted lake. There have been reasonably high recoveries (9 to 30%) in lakes containing no fish or only minnows and sticklebacks, much lower recoveries (2 to 15%) in lakes containing white suckers and minnows, very poor recoveries (0.5 to 5%) in waters with spiny-rayed fish like perch and pumpkinseeds as well as suckers and minnows, and almost negligible returns (0.5%) in waters with native brook trout, lake trout and other fish species. The virtual uselessness of stocking brook trout fingerlings or yearlings in even small, apparently suitable lakes which have perch and sunfish is the reason for the ban on the use of live bait-fish in Algonquin. Too many good planted trout lakes have been ruined for future brook trout stocking by fishermen who have carelessly or inadvertently dumped their minnow pail into the water. When this leads to the establishment of perch or sunfish, the lake must be written off as a planted brook trout fishery unless it is deliberately poisoned to kill all fish (of all species) and the lake replanted – an extremely expensive, and not always successful, procedure.

It is interesting to note that plantings of brook trout are unsuccessful in lakes containing perch and yet this species is very often present in natural brook trout lakes and indeed is the chief summer food and the main reason for the rapid growth of many native brook trout. This paradox only points out the fact that we need to do much more research before we can effectively manage brook trout fisheries.

One thing is certain, however. No longer can we afford to dump thousands of hatchery trout into lakes with the expectation that fishing will automatically improve. We must have a demonstrable prospect for success before – not after – we start dumping in those fish costing about $20.00 per kilogram.

Special Splake Fisheries – Although trout stocking in Algonquin Park has generally given dismal results, there are circumstances which can make for success and make stocking a justifiable procedure in the Highway 60 corridor. In suitable and highly accessible lakes with no significant remaining native stock or brook trout populations the creation of special splake fisheries can be justified.

The splake is a man-created hybrid between our two native trout resulting from the fertilization of lake trout eggs with brook trout

sperm. The hybrid combines many of the qualities of its parents – including the brook trout's fast growth and the lake trout's large size.

Planted splake have done better than planted brook trout in even smaller sometimes boggy bodies of water, and occasionally have had truly spectacular successes in deeper, colder lakes of moderate size. In Jack Lake for example, 65% of the splake planted in 1954 were recovered by fishermen and an additional 10% were taken in researchers' nets. The growth of the fish was truly remarkable. Yearlings (planted at about 10 centimetres long) had reached lengths of 30 centimetres by October of the same year, averaging 4 centimetres longer than native brook trout and 13 to 25 centimetres longer than lake trout of the same age. After four years, the planted splake were over 50 centimetres long and weighed close to two kilograms.

Splake resemble brook trout by inhabiting the transition layer between the warm upper lake and cold lower lake in summer, but they also have a strong schooling tendency providing the fisherman with short bursts of excellent fishing. Spawning by splake (again with characteristics of both parents) was observed for the first time in nature in Jack Lake, but there have been no recoveries of second generation fish to this date.

Because of their intermediate nature, many anglers may not realize they have caught a hybrid trout unless they know what to look for. The spots are usually pinkish, although many fish have little or no colour, and the tail is generally intermediate between the deeply forked tail of the lake trout and the square tail of the brook trout. The only positive way to tell is to open up the fish and examine the worm-like projections on the front part of the intestine just behind the stomach. These are called pyloric caeca and function in digestion. Lake trout have 100-190 of them, brook trout have 20-50, and splake usually have 70-80. A character such as this is much more reliable than external appearance. It is important to identify your catch correctly in lakes known to contain splake because the catch limit for splake is less than it is for brook trout, and you are responsible for knowing which you have.

Environmental Improvements – In addition to limiting the catch through regulations, and, in rare cases, attempting to maintain stocks by plantings of hatchery fish, there is a third general way in which trout fisheries can be improved.

Some lakes are probably poor trout producers solely because there is a shortage of suitable spawning areas. Because brook trout require very precise conditions of spring seepage coming up through a sandy or gravelly bottom, it is difficult to create acceptable artificial spawning areas and only a few initial experiments in this area have been tried in Algonquin. Lake trout on the other hand, only need suitable rock at the right depth and we occasionally create new spawning beds in lakes where existing ones seem to be scarce or where they are exposed when the water is drawn down in the fall for hydro purposes. An attempt was made in 1955, for example, to induce lake trout to use artificial spawning beds built with 200 tons of broken rock in deeper waters of Shirley Lake to offset the effect of drawdowns. Because spawning trout have a strong homing behaviour to their traditional spawning beds, the Shirley Lake trout had to be induced to use the artificial beds but the experiment was eventually successful. This could never be done on an extensive basis in Algonquin Park, however, because of the high costs, and, in many cases, the absence of road access to the water for bringing in rock.

Another type of environmental improvement for lake trout was made in Opeongo and Smoke Lakes. In the early days of fisheries research in Algonquin it was noted that Opeongo lake trout grew much more slowly and were often infertile between the ages of 9 and 13 years. This suggested a scarcity of suitable food for lake trout of this size and, in order to fill the gap, ciscoes (also known as lake herring) were introduced to Opeongo in the 1940's. The result has been much improved growth (trout may be up to 40% heavier), the almost complete disappearance of infertile fish, and a corresponding increase in egg production and year class strength. On the debit side, Opeongo lake trout now mature later than they used to and about 70% of the fish caught are immature stock that have never spawned.

A typical lake trout spawning bed on Shirley Lake, in this case partly exposed by a water draw-down for hydro purposes.

Fishing in Algonquin

The following pages are intended primarily for the novice angler. They will give basic information on methods and equipment but only as a starting point, for no-one, not even the expert angler, ever stops developing new skills or learning new methods. Before looking at the basic methods, however, there are a number of matters that should be kept in mind.

Regulations – Before you go fishing in Algonquin you should get a summary of this year's fishing regulations, available for the asking at any Ministry office or by writing to us at the address in the back of this book. Although the exact dates of open seasons change each year, and sometimes other provisions of the regulations, a few generalities usually apply every year. For example, the trout fishing season generally starts on the last Saturday in April and the smallmouth bass season generally begins on the last Saturday in June.

You should also note that the possession of live bait-fish for angling is prohibited at all times.

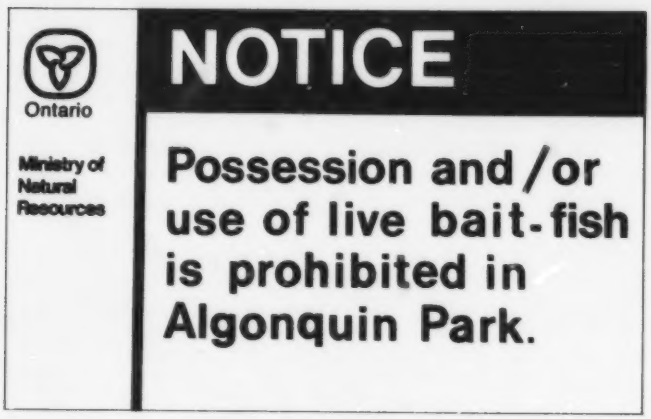
At the present time (1985), residents of Ontario do not require a fishing licence, but if you are from outside the province you should familiarize yourself with the various licences, costs, and conditions given in the Summary of the current year's fishing regulations.

Mercury Contamination – The Ontario Ministry of the Environment has examined fish from numerous lakes in Ontario for the presence of harmful chemical contaminants. Sufficiently high concentrations of mercury have been found in several fish species from several Algonquin lakes, that caution is urged on anyone planning to eat these fish. A list of the affected lakes and fish (based on the most up-to-date information available at the time this book went to press) is found at the back of this book.

As the advisability of eating fish from other Algonquin lakes is revealed through further testing, the information will be made available at all Park access points and in future printings of this book. Please note that the absence of a lake from these lists does not necessarily mean that all fish from that lake are safe to eat. Rather, it means only that no fish from that lake have been tested.

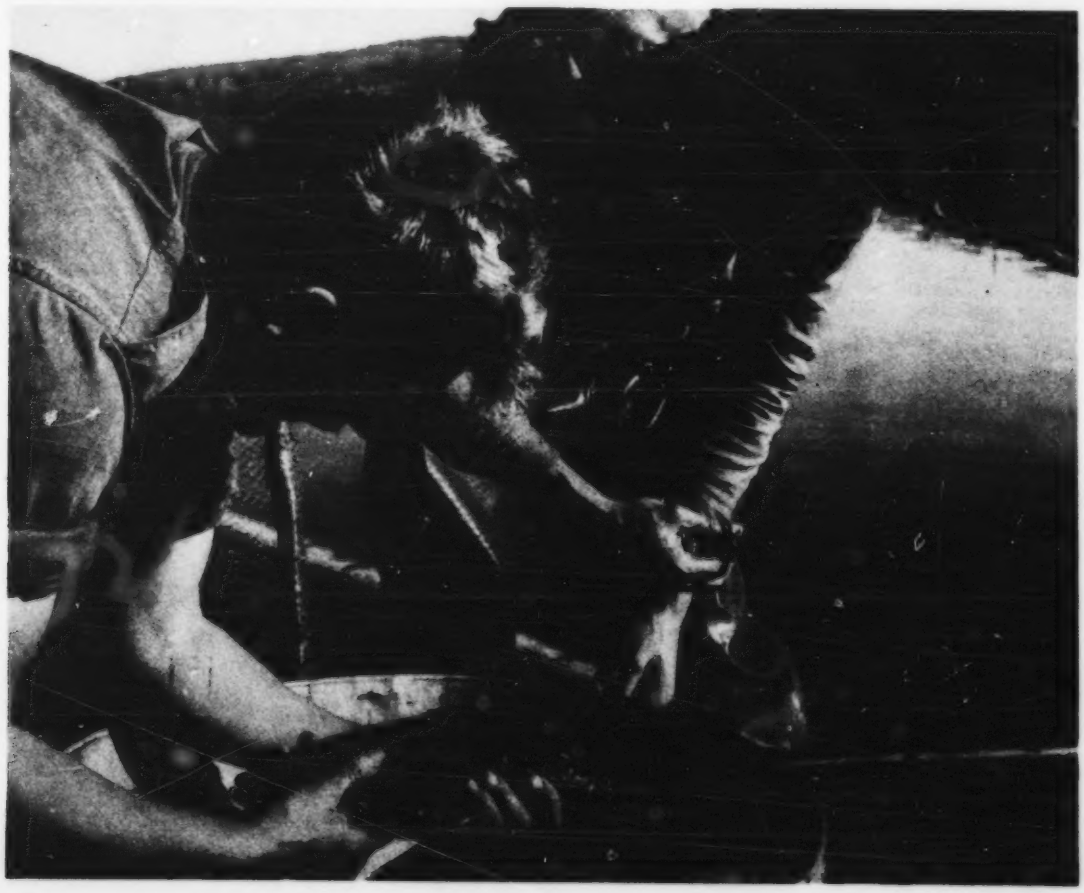
Reporting Tagged or Fin-clipped Fish – In some Algonquin lakes there are fish that have been tagged or fin-clipped. This marking is one of the ways we investigate important matters such as growth rates, mortality rates, and the rate of exploitation by anglers.

If you catch a marked fish, it is very important for the success of our program that you forward the tag number to any Ministry of Natural Resources office along with the following information: your name and address, species of fish, location of catch, date caught, and any other information such as weight and length you are able to provide. We in turn will contact you with complete details concerning your fish and the project in question.



The use of live bait-fish is prohibited in Algonquin because too many lakes have been ruined for trout fishing by the inadvertent introduction into the lakes of perch, suckers, and pumpkinseeds from minnow pails. Such fish prey on, or out-compete, young trout.

Tagging a brook trout. By reporting any tags or clipped fins on fish that you catch, you make an important contribution to our knowledge and management of Algonquin fisheries.



How To Catch Lake Trout

When the ice begins to melt, lake trout can be caught by casting from shore using spinners, spoons, and plugs resembling forage fish.

When the ice has gone in late spring, try casting near rock shoals and gravel bars. Spoons, bucktail spinners in silver or gold, or plugs which resemble forage fish are excellent baits. At this time of year trolling with spinning tackle and any of the above mentioned baits is the best method of locating trout. Try trolling around the shoreline, near islands and shoals. For spring lake trout fishing, an open or closed face spinning reel combined with 4 or 5 kilogram (10 pound) test line and a 2 metre (6-7 ft.) rod is ideal. The early morning and late evening hours are the most productive.

As spring progresses and the lakes warm up, the lake trout retreat to the cold water below the temperature transition zone, often to depths greater than 30 metres (100 feet). The angler requires heavier tackle and different methods to catch trout in deep water.

Trolling with steel or lead core line is the most popular method. A short stiff rod with a spring or roller guide tip, coupled with a reel capable of holding over 150 metres (500 feet) of line, is necessary. Large wobbling spoons, 12 to 15 centimetres (5 or 6 inches) long in silver, gold, or copper, are the best baits for large fish. Spoons come in a variety of colours. A wise angler will try different combinations until he finds the colour the fish are taking that day.

The spoon should be fished near the bottom, and jigged continuously. You jerk the bait forward about half a metre with a sharp snap of the rod, allow the bait to flutter back and then repeat.

When two people are fishing from a canoe, one person can troll jigging the bait, while the other paddles and fishes a bait which doesn't require jigging. Some baits which are effective without jigging are: Archer spinners with minnow type plugs, and gang trolls with lures attached 45-60 centimetres (18-24 inches) behind.

A more leisurely approach to summer fishing is drifting. Allow your boat or canoe to drift with the wind, use a heavy drop sinker to keep your lure near the bottom.

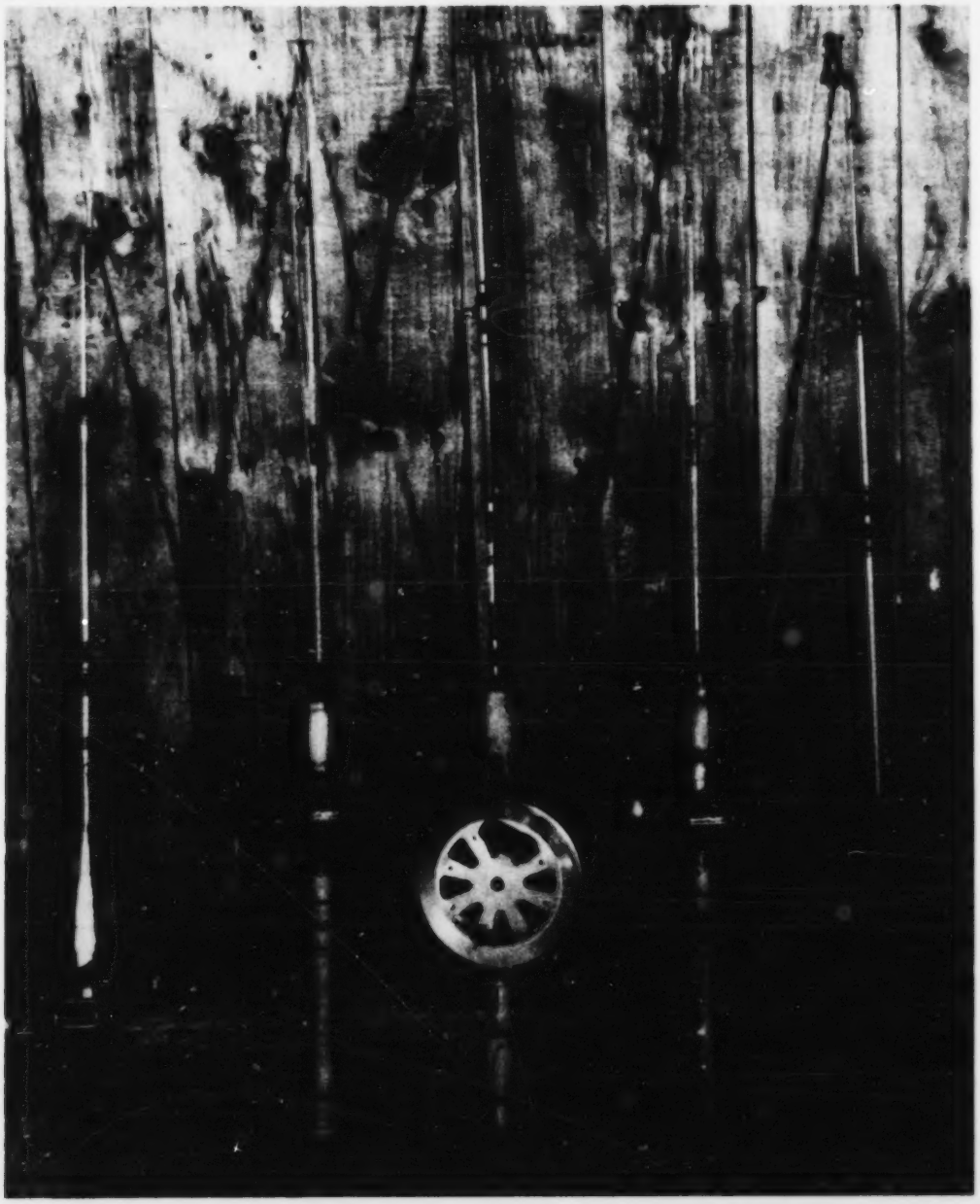
There are large lake trout in Algonquin Park; a large net or a gaff hook may be needed to boat the big ones.

How To Catch Brook Trout

Brook trout are not as large as lake trout, so lighter tackle and smaller baits are required.

For the fly fisherman, a medium action 2.5 metre (8 foot) fly rod and a single action reel is a good start. The spin fisherman should try a 2 metre (6 or 6½ foot) spinning or spincasting rod with an open or closed-faced reel and 3-4 kilograms (6-8 pound) test line.

There are some good combination, fly and spinning, pack rods on the market. They are an excellent choice for the canoeist or backpacker.



A variety of rods and reels used for lake trout fishing. All are designed for deep trolling with steel line.

In fly fishing, the brighter, dry, wet, and streamer fly patterns generally produce the best. The royal coachman, silver doctor, McGinty Bee, and Mickey Fin are popular patterns. Include some of the more subdued patterns for those days when the trout won't take the brighter flies.

The spin fisherman will find that any of the popular spinners, spoons, and plugs in the smaller sizes will take brook trout.

Brook trout will readily take most natural bait, with the earthworm heading the list in popularity. Crickets, grasshoppers, caddis fly larvae, dragonfly nymphs, hellgrammites, and dead minnows are all taken with gusto. Combinations of artificial and natural baits (as with spinners and worms, or spoons and dead minnows) can be very effective.

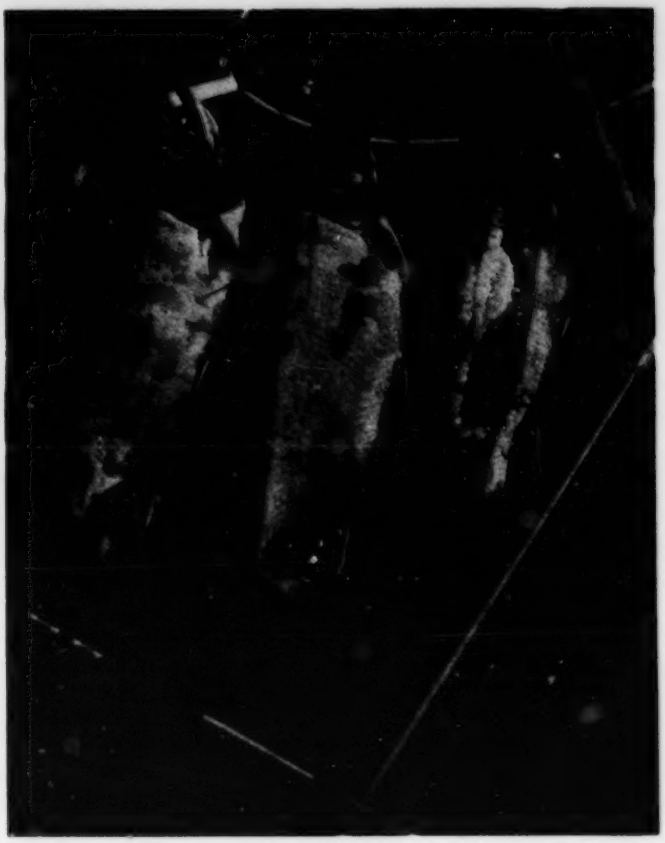
There are two main types of brook trout fishing in Algonquin: stream fishing (which is restricted to a relatively few larger creeks and rivers), and lake fishing.

In stream fishing, work upstream slowly and quietly, casting upstream and letting the current carry your bait near logs, boulders, undercut banks, and overhanging brush. Fish the head and tail of pools carefully, since trout often lurk in these areas waiting for food to drift to them.

In lake fishing, casting or still fishing from shore with natural or artificial baits will produce well in the early spring. But even then, casting to the shore from a boat or canoe is more productive since it allows the angler to cover a larger area.

Two people, one trolling with a spinner and worm and the other casting towards shore, will often take good catches. Try to drop your bait as close to logs, rocks, and overhanging trees as possible. Brook trout will seek shelter near these obstructions and dart out to grab food that passes close by.

In the summer when the fish have moved into the deep transition zone, trolling, as you would for lake trout, with light wire line and small spoons can produce large brook trout. The early morning and late evening hours are the most productive.



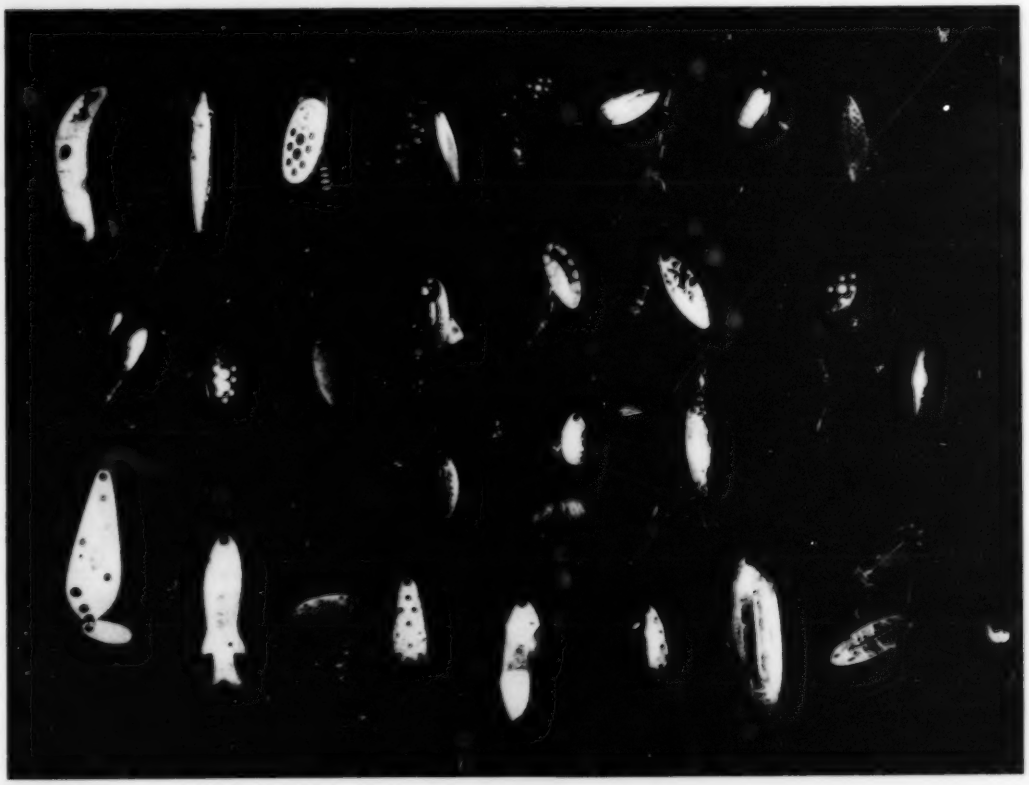
A fine catch of brook trout from an Algonquin lake.

Bringing a big lake trout in close to the canoe.

How To Catch Smallmouth Bass

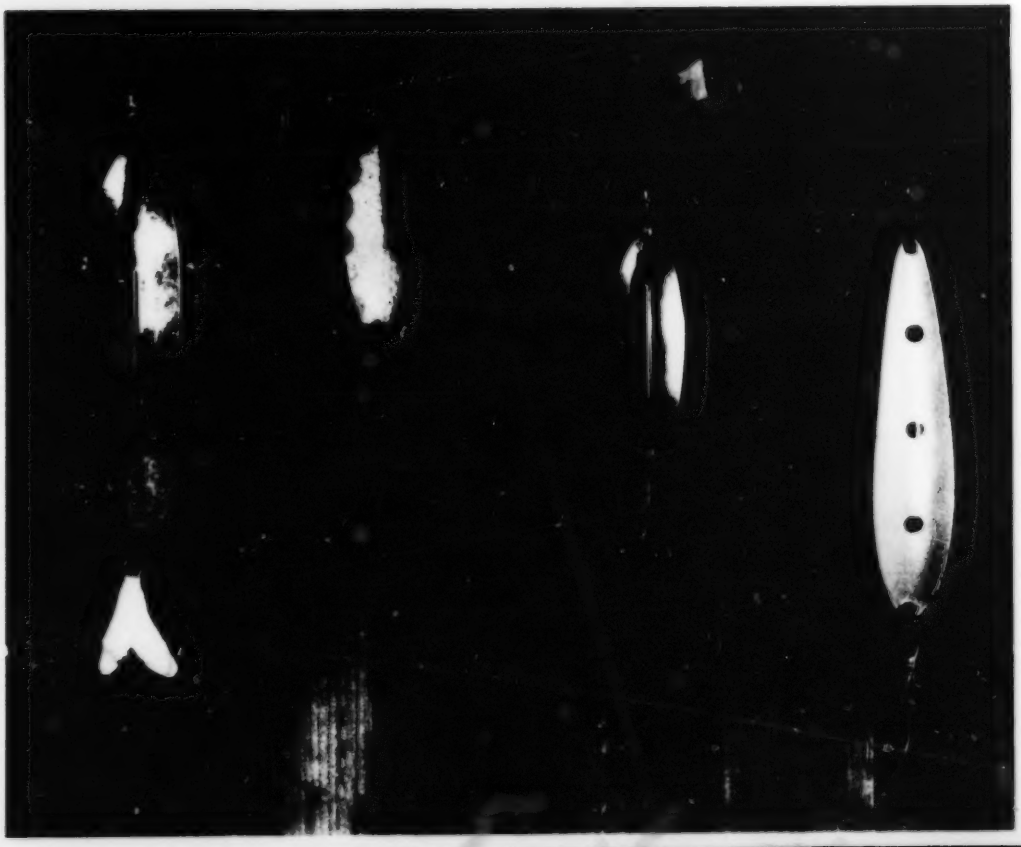
Smallmouth bass readily take a wide variety of natural and artificial baits. Worms, frogs, leeches, dead minnows, a wide variety of insects and crayfish (particularly when in the soft shell stage), are excellent natural baits.

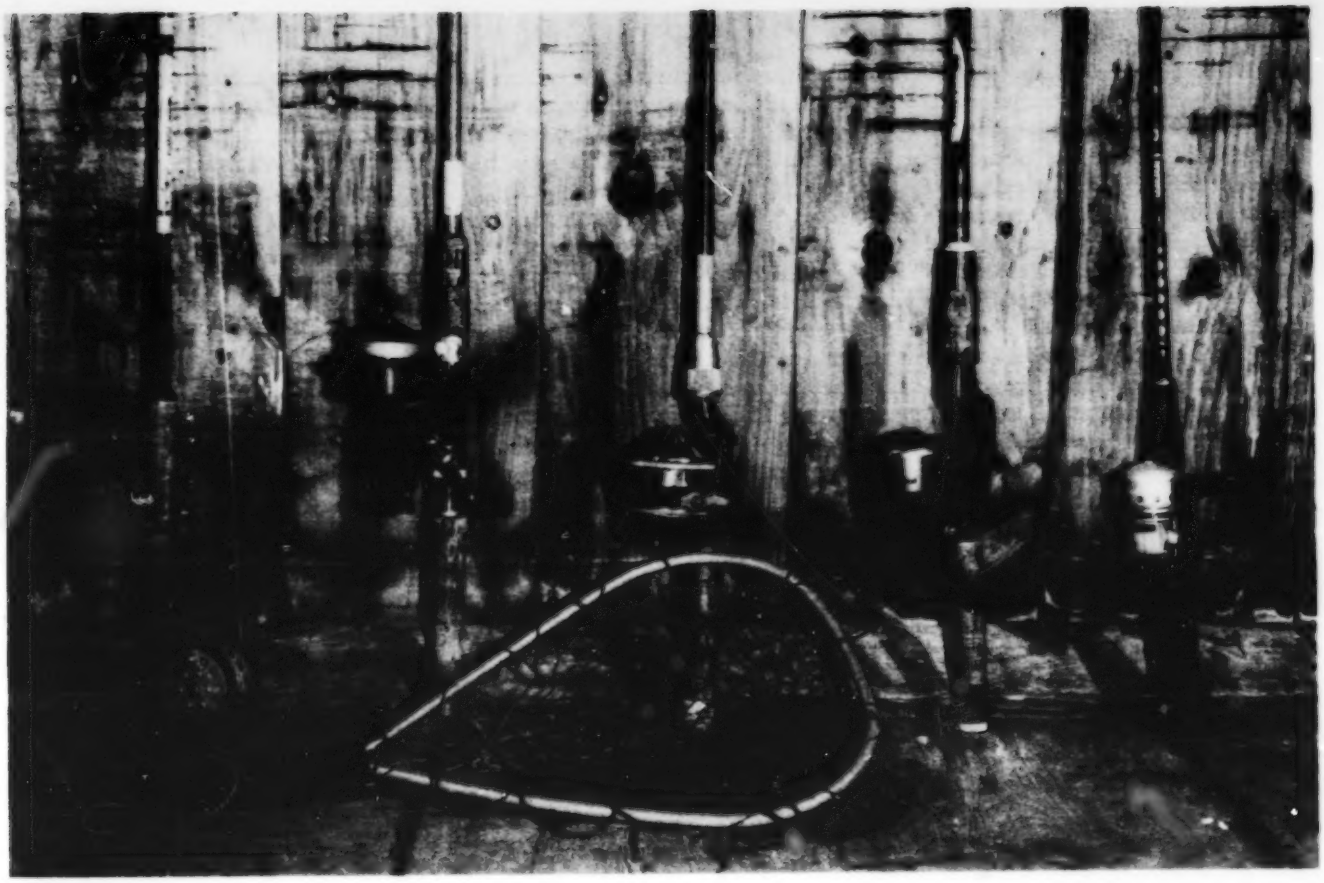
Spoons, spinners, imitation minnows, jigs, fly rod poppers, and wet, dry and streamer flies are good artificial lures. Still fish, cast, or troll for smallmouth bass near sand bars, rock shoals, rocky slopes, and submerged logs. The same rods and reels used for brook trout can be used for smallmouth bass. Again, early morning and evening are the most productive times.



An assortment of typical spinners, spoons, and plugs used for brook trout fishing.

Two medium and two large spoons typically used in trolling with steel line for lake trout.





Rods and reels used for brook trout fishing. A fly rod is shown at the left; the others are various combinations of spinning rods and reels.

A happy angler with a fine brook trout.

Where To Catch Them

The following list will tell you which game fish are present in 325 Algonquin Park lakes and rivers.

The lakes may be located on the Park map-brochure entitled "Canoe Routes of Algonquin Provincial Park" ($2.50) by using the latitude and longitude information given in the list below.

Lakes whose names do not appear on this list, to the best of our knowledge, do not have natural self-sustaining fisheries for the species indicated below.

Summer lake trout fishermen may wish to avail themselves of the depth contour maps available for certain lakes. At the present time (1988) we have maps (at $1.08 each) at the East Gate Information Centre or by writing to us (at Ministry of Natural Resources, Box 219, Whitney, Ontario K0J 2M0), for the following Park lakes: Billy, Booth, Cache, Canisbay, Canoe, Cauliflower, Cedar, Crotch, Grand, Kingscote, Lake Traverse, Louisa, Opeongo, Shirley, Smoke, St. Andrews and Two Rivers.

Good luck – and don't forget your frying pan.

Lake	Latitude	Longitude	Lake Trout	Brook Trout	Small-mouth Bass	Walleye (W), Muskellunge (M), or Pike (P)
Allan	46° 06′	78° 17′	✓	✓		
Alluring	45° 47′	78° 08′	✓	✓		
Alsever	45° 41′	78° 00′	✓	✓		
Amable du Fond River	46° 06′	78° 54′		✓		
Animoosh	45° 46′	78° 08′		✓		
Aubrey	45° 30′	78° 21′			✓	
Aura Lee	46° 04′	78° 35′		✓		
Aylen River	45° 40′	77° 55′		✓	✓	
Bailey	45° 36′	78° 12′		✓		
Band	45° 37′	78° 12′		✓		
Barron	45° 52′	77° 57′		✓	✓	
Barron River	45° 51′	77° 58′			✓	
Basin	45° 44′	77° 48′			✓	✓ (P)
Beaver Paw	45° 50′	78° 52′		✓		
Behan	45° 55′	78° 49′		✓		
Big Bissett	46° 08′	78° 08′		✓		
Big Bissett Creek	46° 08′	78° 08′		✓		
Big Bob	45° 47′	79° 04′		✓		
Big Crow	45° 50′	78° 26′	✓	✓		
Big George	46° 02′	78° 20′		✓		
Biggar	45° 57′	78° 54′	✓	✓		
Big Porcupine	45° 27′	78° 37′	✓	✓		
Big Trout	45° 46′	78° 37′	✓	✓		
Billings	45° 17′	78° 14′		✓		
Birchcliffe	45° 56′	78° 51′		✓	✓	
Bird	45° 55′	78° 32′		✓		
Bissett	46° 05′	78° 13′		✓		
Black Fox	45° 37′	78° 28′	✓			
Blue	45° 46′	78° 41′	✓			
Bluebell	45° 27′	78° 44′		✓		
Bonita	45° 31′	78° 44′			✓	
Bonnechère	45° 28′	78° 35′	✓	✓		
Boot	45° 37′	78° 11′	✓	✓		
Booth	45° 40′	78° 13′	✓	✓	✓	
Brewer	45° 35′	78° 19′	✓			
Bridle	45° 40′	78° 08′			✓	
Bruce	45° 35′	78° 39′	✓			
Brûlé	45° 38′	78° 49′	✓		✓	
Bug	46° 03′	78° 35′		✓		
Burnt Island	45° 39′	78° 38′	✓		✓	
Burntroot	45° 51′	78° 40′	✓	✓		
Butt	45° 42′	78° 57′	✓	✓		
Cache	45° 33′	78° 35′	✓		✓	
Calm	45° 55′	78° 51′		✓		
Calumet	45° 53′	78° 33′	✓	✓		
Camp	45° 23′	78° 20′	✓			
Canisbay	45° 35′	78° 35′	✓		✓	
Canoe	45° 33′	78° 43′	✓		✓	
Carcajou	45° 52′	77° 53′	✓	✓		
Carl Wilson	46° 00′	78° 36′	✓	✓		
Casey	45° 38′	78° 56′		✓		
Cat	45° 47′	78° 08′		✓		
Catfish	45° 56′	78° 33′	✓	✓		
Cauchon	46° 04′	78° 42′	✓	✓		
Cauliflower	45° 24′	78° 16′	✓	✓		
Cedar	46° 01′	78° 30′	✓	✓	✓	✓ (W)
Charles	45° 54′	78° 24′		✓		
Chickaree	45° 46′	78° 31′	✓			
Cinderella	45° 56′	78° 27′		✓		
Clarke	45° 32′	78° 16′		✓	✓	
Clemow	45° 54′	77° 55′	✓		✓	
Clover	45° 46′	77° 44′		✓		
Club	46° 02′	78° 44′		✓		
Clydegale	45° 25′	78° 22′		✓		

Lake	Latitude	Longitude	Lake Trout	Brook Trout	Small-mouth Bass	Walleye (W), Muskellunge (M), or Pike (P)
Coldspring	45° 51′	78° 49′		✓		
Coon	45° 32′	78° 25′	✓		✓	
Cork	45° 52′	77° 39′			✓	
Costello	45° 36′	78° 19′	✓	✓		
Cradle	45° 28′	78° 35′	✓			
Crotch	45° 39′	78° 05′	✓		✓	
Crow River	45° 52′	78° 20′		✓		
Cuckoo	45° 53′	78° 35′		✓		
Daisy	45° 39′	78° 57′	✓	✓		
David	45° 42′	78° 57′		✓		
Delano	45° 31′	78° 36′	✓			
Devine	45° 47′	78° 47′		✓		
Dickson	45° 48′	78° 13′	✓	✓		
Drummer	45° 32′	78° 45′		✓		
Erables	46° 00′	78° 47′	✓			
Ermine	45° 26′	78° 52′		✓		
Eustache	45° 56′	78° 07′	✓	✓		
Farm	45° 39′	78° 07′	✓		✓	
Farncomb	45° 54′	78° 17′		✓		
Fassett	46° 01′	79° 06′	✓	✓		
Florence	45° 27′	78° 28′		✓		
Fools	45° 40′	78° 32′	✓	✓		
Fitz	46° 03′	78° 10′		✓		
Found	45° 33′	78° 38′	✓	✓		
Foys	45° 47′	77° 53′	✓	✓		
Francis	45° 58′	78° 12′		✓	✓	
Frank	45° 26′	78° 28′		✓		
Fraser	45° 32′	78° 20′	✓			
Galeairy	45° 29′	78° 17′	✓	✓	✓	
Gerald	46° 02′	78° 10′		✓		
Ghost	46° 03′	78° 25′		✓		
Gibson	45° 53′	78° 55′		✓		
Gilmour	46° 05′	78° 30′	✓	✓		
Glacier	46° 01′	78° 35′		✓		
Godda	45° 38′	78° 14′	✓	✓		
Gordon	45° 32′	78° 23′			✓	
Gouinlock	46° 03′	78° 39′	✓	✓		
Grand	45° 52′	77° 46′	✓	✓	✓	
Grant	45° 33′	78° 34′			✓	
Grape	45° 31′	78° 40′			✓	
Greenleaf	45° 53′	77° 57′	✓		✓	
Groundhog	45° 37′	78° 47′		✓		
Gull	46° 02′	78° 34′		✓		
Hailstorm	45° 41′	78° 33′	✓	✓		
Hambone	45° 40′	78° 58′	✓	✓		
Happy Isle	45° 45′	78° 30′	✓		✓	
Harness	45° 31′	78° 32′	✓			
Harry	45° 26′	78° 27′		✓		
Hayes	45° 54′	78° 38′		✓		
Head	45° 31′	78° 34′	✓			
Hemlock	45° 48′	78° 33′		✓		
Heron	45° 27′	78° 48′		✓	✓	
Hilly	45° 27′	78° 46′		✓		
Hiram	45° 38′	78° 27′	✓			
Hogan	45° 53′	78° 29′	✓	✓		
Hot	45° 38′	78° 54′			✓	
Hurdman	46° 05′	78° 37′		✓		
Ignace	45° 53′	77° 35′			✓	
Iris	45° 38′	78° 35′		✓		
Islet	45° 37′	78° 53′			✓	
Joe	45° 35′	78° 43′	✓		✓	
Kakasamic	46° 00′	79° 01′		✓		
Kathyln	45° 36′	78° 32′	✓			
Kearney	45° 35′	78° 26′	✓	✓	✓	

Lake	Latitude	Longitude	Lake Trout	Brook Trout	Small-mouth Bass	Walleye (W), Muskellunge (M), or Pike (P)
Kelly	45° 53′	78° 50′		✓		
Kellys	46° 06′	77° 43′			✓	
Kennedy	45° 52′	78° 47′		✓		
Kenneth	45° 31′	78° 33′	✓			
Kioshkokwi	46° 04′	78° 54′	✓	✓		
Kingscote	45° 12′	78° 13′	✓			
Kirkwood	45° 29′	78° 33′	✓			
Kitty	45° 39′	78° 09′		✓	✓	
la Muir	45° 50′	78° 35′	✓	✓		
Lauder	46° 10′	78° 52′	✓	✓		
Laurel	46° 04′	78° 36′	✓			✓ (W)
Lavieille	45° 52′	78° 15′	✓	✓		
Lawrence	45° 30′	78° 31′	✓			
Length	45° 52′	77° 40′		✓		
Linda	45° 37′	78° 36′	✓		✓	
Little	46° 06′	78° 07′	✓	✓		
Little Billings	45° 17′	78° 14′		✓		
Little Cauchon	46° 03′	78° 40′	✓	✓		
Little Cauliflower	45° 23′	78° 18′		✓		
Little Coon	45° 26′	78° 35′	✓	✓		
Little Crooked	45° 50′	78° 11′		✓		
Little Crow	45° 49′	78° 27′		✓		
Little Dickson	45° 48′	78° 10′	✓	✓		
Little Doe	45° 38′	78° 42′	✓		✓	
Little Hay	45° 22′	78° 16′			✓	
Little Island	45° 32′	78° 38′	✓	✓		
Little Joe	45° 36′	78° 42′		✓	✓	
Little Madawaska River	45° 59′	78° 19′		✓		
Little Mink	46° 05′	78° 50′		✓		
Little Osler	45° 57′	78° 46′		✓		
Little Trout	45° 43′	78° 54′	✓	✓		
Loft	45° 36′	78° 46′		✓		
Loontail	45° 50′	78° 52′		✓		
Longbow	45° 46′	78° 52′	✓	✓		
Longer	45° 48′	78° 40′	✓	✓		
Lorne	45° 59′	79° 03′	✓	✓		
Lost Coin	46° 02′	78° 06′		✓		
Lost Dog	45° 57′	79° 06′	✓	✓		
Louisa	45° 28′	78° 30′	✓			
Lower Minnow	45° 13′	78° 13′		✓		
Loxley	46° 04′	78° 38′	✓	✓		
Luckless	45° 57′	78° 35′		✓		
Lynx	45° 56′	78° 35′	✓	✓		
MacIntosh	45° 40′	78° 46′	✓	✓		
Madawaska	45° 20′	78° 23′	✓	✓		
Magnetawan	45° 40′	78° 59′		✓		
Manitou	46° 00′	79° 00′	✓	✓		
Maple	46° 01′	78° 50′	✓	✓		
McCarthy Cr.	45° 38′	78° 12′		✓	✓	
McCauley Cr.	45° 34′	78° 10′		✓		
McCraney	45° 34′	78° 54′	✓	✓		
McGarvey	45° 26′	78° 34′	✓			
McKaskill	45° 44′	78° 03′	✓	✓		
McManus	45° 57′	77° 37′				✓ (W) ✓ (M)
McNorton	45° 53′	78° 06′		✓		
Meda	45° 56′	78° 58′		✓		
Menona	46° 01′	78° 19′		✓		
Merchant	45° 46′	78° 32′	✓	✓		
Merganser	46° 05′	78° 23′		✓		
Mildred	45° 28′	78° 28′		✓		
Mink	46° 04′	78° 48′	✓	✓		
Minnehaha	45° 51′	78° 43′		✓		
Misty	45° 42′	78° 49′		✓		
Moccasin	45° 40′	78° 52′			✓	

Lake	Latitude	Longitude	Lake Trout	Brook Trout	Small-mouth Bass	Walleye (W), Muskellunge (M), or Pike (P)
Mole	45° 38′	78° 13′		✓	✓	
Mouse	46° 01′	78° 43′		✓		
Mubwayaka	45° 43′	78° 57′		✓		
Mud Cr.	45° 31′	78° 17′		✓		
Nadine	45° 57′	78° 44′		✓		
Namakootchie	45° 31′	78° 46′	✓	✓		
Narrowbag	45° 58′	78° 31′		✓		
Nepawin	45° 47′	78° 28′	✓	✓		
Nipissing River	46° 00′	78° 31′		✓		
Norm's	45° 50′	77° 33′		✓		
North Branch	45° 50′	78° 04′		✓		
North Cuckoo	45° 54′	78° 36′		✓		
North Depot	46° 04′	78° 17′	✓	✓		
North Grace	45° 27′	78° 30′	✓	✓		
North Madawaska R.	45° 37′	78° 32′		✓	✓	
North Raven	45° 58′	78° 47′	✓			
North River Lake	46° 05′	78° 24′	✓	✓		
North Rouge	46° 04′	78° 02′		✓		
North Tea	45° 57′	79° 02′	✓	✓		
Opalescent	45° 53′	77° 39′			✓	
Opeongo	45° 42′	78° 23′	✓		✓	
Opeongo River	45° 30′	77° 57′		✓	✓	
Osler	45° 57′	78° 46′		✓		
Otterpaw	46° 02′	78° 08′		✓		
Otterslide	45° 43′	78° 36′	✓			
Owenee	45° 58′	78° 21′	✓			
Owl	45° 36′	78° 38′	✓			
Oxtongue River	45° 26′	78° 50′		✓		
Park	45° 25′	78° 51′			✓	
Pen	45° 27′	78° 23′	✓	✓		
Perley	45° 53′	78° 37′		✓		
Petawawa River	46° 02′	78° 00′		✓	✓	✓(W) ✓(M)
Phillips	45° 55′	78° 24′		✓		
Phipps	45° 29′	78° 34′	✓			
Pinetree	45° 33′	78° 19′	✓			
Plover	46° 00′	78° 15′			✓	✓(W)
Plumb	45° 55′	78° 37′		✓		
Pog	45° 34′	78° 27′	✓		✓	
Polly	45° 36′	78° 36′			✓	
Potter	45° 37′	78° 46′	✓	✓	✓	
Prottler	45° 27′	78° 20′	✓	✓	✓	
Proulx	45° 47′	78° 24′		✓		
Provoking	45° 34′	78° 30′			✓	
Queer	45° 43′	78° 53′	✓	✓		
Radiant	45° 00′	78° 17′	✓	✓	✓	✓(W)
Ragged	45° 29′	78° 38′	✓	✓	✓	
Rain	45° 38′	78° 55′	✓		✓	
Rainbow	45° 35′	78° 45′		✓		
Raja	45° 37′	78° 14′		✓		
Rana	46° 03′	78° 28′		✓		
Ravenau	45° 59′	78° 32′		✓		
Redfox	45° 37′	78° 27′		✓		
Redrock	45° 46′	78° 28′	✓	✓		
Reed	46° 04′	78° 11′		✓		
Rence	45° 25′	78° 28′		✓		
Robin	45° 40′	78° 05′		✓		
Robinson	45° 54′	78° 41′		✓		
Robitaille	45° 41′	77° 52′	✓	✓		
Robitaille Cr.	45° 42′	77° 50′			✓	
Rock	45° 31′	78° 24′	✓		✓	
Rod & Gun	45° 29′	78° 31′		✓		
Rosebary	45° 46′	78° 55′	✓	✓		
Rouge	46° 04′	78° 02′		✓		
Roundbush	45° 42′	77° 59′		✓		

Lake	Latitude		Longitude		Lake Trout	Brook Trout	Small-mouth Bass	Walleye (W), Muskellunge (M), or Pike (P)
Round Island	45°	44′	78°	12′	✓			
St. Andrews	45°	51′	78°	41′	✓	✓		
St. Francis	45°	51′	77°	39′		✓	✓	
Sam	45°	32′	78°	44′		✓		
Sawyer	45°	39′	78°	54′	✓	✓	✓	
Scott	45°	29′	78°	43′		✓		
Sec	45°	49′	77°	33′	✓	✓	✓	
Shad	46°	02′	79°	07′		✓		
Shall	45°	39′	78°	04′	✓		✓	
Shawandasee	45°	26′	78°	48′		✓		
Shirley	45°	42′	78°	08′	✓			
Shirley Cr.	45°	43′	78°	10′		✓		
Sisco	45°	58′	79°	04′	✓			
Smith	45°	58′	77°	40′				✓(W) ✓(M)
Smoke	45°	31′	78°	41′	✓		✓	
Source	45°	34′	78°	39′	✓	✓	✓	
South Little Mink	45°	12′	78°	08′	✓	✓		✓(W) ✓(M)
Stringer	45°	26′	78°	30′		✓		
Sunbeam	45°	40′	78°	42′	✓	✓		
Sundassa	45°	50′	78°	08′		✓		
Sunday	45°	36′	78°	24′	✓			
Swan	45°	30′	78°	43′	✓		✓	
Sylvia	45°	32′	78°	20′	✓	✓		
Tanamakoon	45°	33′	78°	37′	✓		✓	
Tattler	45°	39′	78°	14′		✓	✓	
Tea	45°	31′	78°	44′	✓		✓	
Tecumseh	46°	05′	78°	28′		✓		
Tepee	45°	36′	78°	43′	✓	✓	✓	
Thomas	45°	49′	78°	17′		✓		
Three Mile	46°	00′	78°	55′	✓	✓		
Tim	45°	45′	79°	02′	✓	✓		
Tim River	45°	44′	78°	52′		✓		
Timberwolf	45°	41′	78°	48′	✓			
Tip Up	45°	41′	78°	16′		✓	✓	
Tom Thomson	45°	38′	78°	44′	✓			
Traverse	45°	58′	78°	03′			✓	✓(W) ✓(M)
Trout	45°	44′	78°	41′	✓	✓		
Two Rivers	45°	35′	78°	29′	✓		✓	
Upper Minnow	45°	14′	78°	14′		✓		
Upper Pine	45°	44′	77°	41′				✓(P)
Varley	46°	00′	78°	35′		✓		
Vireo	45°	44′	77°	59′	✓			
Vulture	45°	51′	78°	49′		✓		
Wabamimi	46°	04′	78°	21′		✓		
Waterclear	46°	03′	78°	46′		✓		
Weasel	46°	04′	78°	14′		✓		
Welcome	45°	25′	78°	25′		✓		
Wendigo	46°	07′	78°	17′	✓	✓		
West Harry	45°	33′	78°	49′		✓		
Westward	45°	30′	78°	47′		✓		
Wet	45°	50′	77°	34′			✓	
Whiskey Jack	45°	53′	78°	42′	✓	✓		
Whitebirch	46°	04′	78°	49′	✓			
Whitefish	45°	33′	78°	25′	✓		✓	
White Gull	45°	40′	78°	27′	✓	✓		
White Partridge	45°	50′	78°	06′	✓	✓		
White Partridge Cr.	45°	54′	78°	08′		✓		
Whitson	45°	59′	77°	42′				✓(W) ✓(M)
Wilkins	45°	41′	77°	55′	✓			
Wright	45°	45′	78°	18′	✓		✓	
Number of Lakes with Particular Fish Present					149	230	79	W-10, M-5, NP-2,

Check-List of Algonquin Fish Species

This book has concentrated on Algonquin's sport fish which account for a relatively small number of the Park's fish species. Fifty of the species presently found in Algonquin's lakes and streams are listed below.

The English, Latin, and French names follow those given in "Freshwater Fishes of Canada" by W. B. Scott and E. J. Crossman (Bulletin 184, Fisheries Research Board of Canada, Ottawa, 1973). Those species marked (N) have a restricted range on the fringes of the Park (usually the waters of the lower Petawawa on the northeast side of Algonquin).

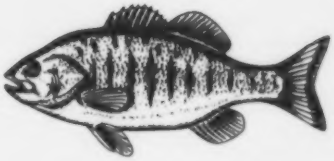
ORDER:		
STURGEONS and PADDLEFISHES	**ACIPENSERIFORMES**	**ESTURGEONS ET SPATULES**
Family:		
Sturgeons	**Acipenseridae**	**Esturgeons**
Lake Sturgeon (N)	*Acipenser fulvescens (N)*	Esturgeon de lac (N)
ORDER:		
GARS	**LEPIGOSTEIFORMES**	**LÉPISOSTÉS**
Family:		
Gars	**Lepisosteidae**	**Lépisostés**
Longnose Gar (N)	*Lepisosteus osseus (N)*	Lépisosté osseux (N)
ORDER:		
HERRINGS	**CLUPEIFORMES**	**HARENGS**
Family:		
Salmons, Trouts, Charrs and Whitefishes	**Salmonidae**	**Saumons, Truites, Ombles et Corégones**
Brook Trout	*Salvelinus fontinalis*	Omble de fontaine
Lake Trout	*Salvelinus namaycush*	Touladi (Truite grise)
Cisco	*Coregonus artedii*	Cisco de lac
Shortjaw Cisco (N)	*Coregonus zenethicus (N)*	Cisco à mâchoires égales (N)
Lake Whitefish	*Coregonus clupeaformis*	Grand corégone
Round Whitefish	*Prosopium cylindraceum*	Ménomini rond
Family:		
Mudminnows	**Umbridae**	**Umbres**
Central Mudminnow	*Umbra limi*	Umbre de vase
Family:		
Pikes	**Esocidae**	**Brochets**
Northern Pike (N)	*Esox lucius (N)*	Grand brochet (N)
Muskellunge (N)	*Esox masquinongy (N)*	Maskinongé (N)
ORDER:		
MINNOWS and CARPS	**CYPRINIFORMES**	**CARPES ET MÉNÉS**
Family:		
Minnows and Carps	**Cyprinidae**	**Carpes et ménés**
Northern Redbelly Dace*	*Chrosomus eos**	Ventre rouge du nord*
Finescale Dace*	*Chrosomus neogaeus**	Ventre citron*
Lake Chub	*Couesius plumbeus*	Méné de lac
Brassy Minnow	*Hybognathus hankinsoni*	Méné laiton
Golden Shiner	*Notemigonus crysoleucas*	Méné jaune
Common Shiner	*Notropis cornutus*	Méné à nageoires rouges
Blackchin Shiner	*Notropis heterodon*	Menton noir
Blacknose Shiner	*Notropis heterolepis*	Museau noir
Spottail Shiner	*Notropis hudsonius*	Queue à tache noire
Mimic Shiner	*Notropis volucellus*	Méné pâle
Bluntnose Minnow	*Pimephales notatus*	Ventre-pourri
Fathead Minnow	*Pimephales promelas*	Tête-de-boule
Blacknose Dace	*Rhinichthys atratulus*	Naseux noir
Longnose Dace	*Rhinichthys cataractae*	Naseux de rapides
Creek Chub	*Semotilus atromaculatus*	Mulet à cornes
Fall Fish	*Semotilus corporalis*	Ouitouche
Pearl Dace	*Semotilus margarita*	Mulet perlé

*Hybrids between the Northern Redbelly Dace and the Finescale Dace are common in many Park lakes.

Family:		
Suckers	**Catostomidae**	**Suceurs**
Longnose Sucker	*Catostomus catostomus*	Meunier rouge
White Sucker	*Catostomus commersoni*	Meunier noir
Shorthead Redhorse	*Moxostoma macrolepidotum*	Suceur rouge
Family:		
Catfishes	**Ictaluridae**	**Barbottes et barbues**
Brown Bullhead	*Ictalurus nebulosus*	Barbotte brune
Channel Catfish (N)	*Ictalurus punctatus (N)*	Barbue de rivière (N)
ORDER:		
EELS	**ANGUILLIFORMES**	**ANGUILLES**
Family:		
Freshwater Eels	**Anguillidae**	**Anguilles**
American Eel (extinct in Park)	*Anguilla rostrata*	Anguille d'Amérique
ORDER:		
CODS	**GADIFORMES**	**MORUES**
Family:		
Cods	**Gadidae**	**Morues**
Burbot (Ling)	*Lota lota*	Lotte
ORDER:		
STICKLEBACKS and RELATIVES	**GASTEROSTEIFORMES**	**EPINOCHES**
Family:		
Sticklebacks	**Gasterosteidae**	**Epinoches**
Brook Stickleback	*Culaea inconstans*	Epinoche à cinq épines
Ninespine Stickleback	*Pungitius pungitius*	Epinoche à neuf épines
ORDER:		
TROUT-PERCHES	**PERCOPSIFORMES**	**OMISCOS**
Family:		
Trout-Perches	**Percopsidae**	**Omiscos**
Trout-Perch	*Percopsis omiscomaycus*	Omisco
ORDER:		
PERCH-LIKE FISHES	**PERCIFORMES**	**PERCHES**
Family:		
Blackbasses and Sunfishes	**Centrarchidae**	**Achigans et crapets**
Rock Bass	*Ambloplites rupestris*	Crapet de roche
Pumpkinseed	*Lepomis gibbosus*	Crapet-soleil
Smallmouth Bass	*Micropterus dolomieui*	Achigan à petite bouche
Largemouth Bass (N)	*Micropterus salmoides (N)*	Achigan à grande bouche (N)
Family:		
Perches and Darters	**Percidae**	**Perches et Dards**
Yellow Perch	*Perca flavescens*	Perchaude
Walleye (N)	*Stizostedion vitreum (N)*	Doré jaune (N)
Iowa Darter	*Etheostoma exile*	Dard à ventre jaune
Johnny Darter	*Etheostoma nigrum*	Raseux-de-terre noir
Logperch	*Percina caprodes*	Fouille-roche
ORDER:		
SCULPINS	**SCORPAENIFORMES**	**CHABOTS**
Family:		
Sculpins	**Cottidae**	**Chabots**
Slimy Sculpin	*Cottus cognatus*	Chabot visqueux
Spoonhead Sculpin	*Cottus ricei*	Chabot à tête plate
Deepwater Sculpin (N)	*Myoxocephalus quadricornis (N)*	Chabot de profondeur (N)

A Few of Algonquin's Fish Species Illustrated

Lake Trout

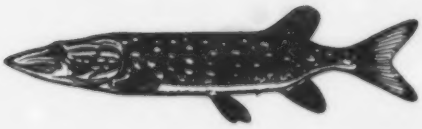


Smallmouth Bass

Brook Trout

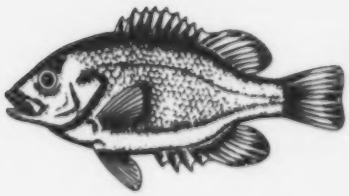
Muskellunge

Whitefish



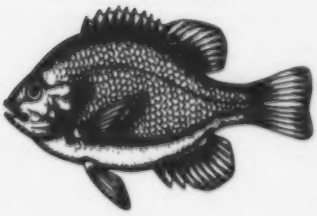
Pike

Cisco (lake herring)

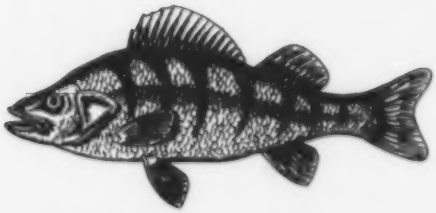


Rock Bass

Pickerel (Walleye)



Pumpkinseed



Yellow Perch

This American eel was caught in Galeairy Lake about 1930. Eels were also known to occur in Opeongo Lake and they probably occurred elsewhere in the Park as well. Their extinction in Algonquin was brought about by the construction of dams on the rivers flowing from the Park. Eels migrate to the Atlantic Ocean to breed and this (or the return of young fish) was stopped by the dams. No-one knows what ecological effects this extinction may have had.

A large lake trout caught in 1906 in Burnt Island lake. With today's fishing pressures the chances are very slim for a trout to last long enough to get this big.

Conversions Between English and Metric Measures

English to Metric

Length
- 1 inch = 2.54 centimetres
- 1 yard = 0.91 metres
- 1 mile = 1.6 kilometres

Area
- 1 acre = 0.40 hectares
- 1 square mile = 2.59 square kilometres

Mass
- 1 ounce = 28.4 grams
- 1 pound = 0.45 kilograms

Temperature
- 32°F = 0°C
- 212°F = 100°C

Metric to English

Length
- 1 centimetre = 0.39 inches
- 1 metre = 1.09 yards
- 1 kilometre = 0.62 miles

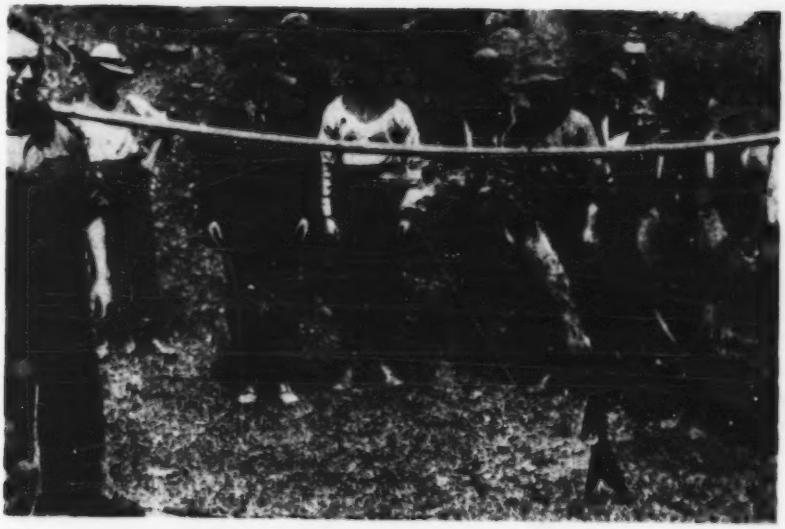
Area
- 1 hectare = 2.47 acres
- 1 square kilometre = 0.39 square miles

Mass
- 1 gram = 0.03 ounces
- 1 kilogram = 2.2 pounds

Temperature
- 0°C = 32°F
- 100°C = 212°F

Joe LaVally, famous Algonquin Park guide, filleting a lake trout (1930's?).

Another of the old giants (lake trout).



A sturgeon caught by a logger in the Madawaska River during a river drive in 1919. Sturgeon still occur today in Algonquin in the Petawawa River below Lake Traverse.

We hope you have enjoyed this book and found it helpful. For further information, including park maps, please address your correspondence to:

Park Superintendent
Algonquin Provincial Park
Ministry of Natural Resources
Box 219
Whitney, Ontario
K0J 2M0

Warning

Mercury Contaminated Fish in Algonquin

The Ontario Ministry of the Environment has tested fish from 20 Algonquin lakes for mercury contamination. Anyone planning to eat fish from these lakes should abide by the consumption guidelines given in the table below.

Please note that children under 15 and women of childbearing age should eat only fish from category

Also, the absence of a lake in the table does not mean that all fish from that lake are safe to eat. Rather, it means only that no fish from that lake have been tested.

Lake	Fish Species	Length of Fish									
		15 cm (6 in)	15-20 cm (6-8 in)	20-25 cm (8-10 in)	25-30 cm (10-12 in)	30-35 cm (12-14 in)	35-45 cm (14-18 in)	45-55 cm (18-22 in)	55-65 cm (22-26 in)	65-75 cm (26-30 in)	75 cm (30 in)
Cache	Smallmouth Bass	*	*					*	*	*	*
	Lake Trout	*	*	*	*						
Canisbay	Lake Trout	*	*	*	*	*					*
Cedar	Lake Trout	*	*	*							
	Walleye	*	*	*						*	*
Delano	Lake Trout	*	*	*	*				*	*	*
Dickson	Brook Trout	*	*	*	*				*	*	*
Galeairy	Smallmouth Bass	*	*			*	*	*	*	*	*
Hogan	Brook Trout	*							*	*	*
Kioshkokwi	Whitefish	*	*	*	*			*	*	*	*
	Lake Trout	*	*	*							
la Muir	Lake Trout	*	*								
Lavieille	Brook Trout	*	*	*	*			*	*	*	*
	Whitefish	*	*	*				*	*	*	*
Louisa	Lake Trout	*	*	*					*	*	*
McCraney	Lake Trout	*						*	*	*	*
McGarvey	Lake Trout	*	*	*	*	*	*				
Opeongo	Lake Trout	*	*	*							*
	Smallmouth Bass	*	*					*	*	*	*
	Whitefish	*	*	*	*				*	*	*
Redrock	Brook Trout	*	*	*				*	*	*	*
Round Island	Lake Trout	*	*	*	*	*				*	*
Ryan	Splake	*	*	*	*			*	*	*	*
Smoke	Burbot (Ling)	*	*	*	*	*				*	*
	Smallmouth Bass	*					*	*	*	*	*
	Lake Trout	*	*	*							
	Whitefish	*	*	*				*	*	*	*
Timberwolf	Lake Trout	*	*	*	*	*			*	*	*
White Partridge	Brook Trout	*	*				*	*	*	*	*

Meaning of Symbols

Fish Category	Short Term Consumption			Long Term Consumption
	One Week	Two Weeks	Three Weeks	
	No Restrictions	No Restrictions	No Restrictions	No Restrictions
	10 meals per wk. 2.3 kg/wk. (5.1 lb/wk.)	5 meals per wk. 1.3 kg/wk. (2.8 lb/wk.)	4 meals per wk. 0.95 kg/wk. (2.1 lb/wk.)	0.226 kg/wk. (0.5 lb/wk.)
	7 meals per wk. 1.54 kg/wk. (3.4 lb/wk.)	4 meals per wk. 0.86 kg/wk. (1.9 lb/wk.)	3 meals per wk. 0.63 kg/wk. (1.4 lb/wk.)	0.136 kg/wk. (0.3 lb/wk.)
	Don't eat at all	Don't eat at all	Don't eat at all	Don't eat at all
*	No data available			

Algonquin Park Publications

This book is only one of many publications produced by The Friends of Algonquin Park. The Friends is an independent registered charitable organization with a volunteer board of directors and was established in 1983 to assist the Park with its educational and interpretive programs.

The following is a list of other Friends' publications available at our two bookstores (located at the Park Museum and the Pioneer Logging Exhibit) or by writing to the address below.

MAPS	(1988) Price
Canoe Routes of Algonquin Provincial Park	$2.50
Backpacking Trails of Algonquin Provincial Park	1.50
BOOKS	
Fishing in Algonquin Provincial Park	$1.50
Birds of Algonquin Provincial Park	1.50
Mammals of Algonquin Provincial Park	1.50
Reptiles and Amphibians of Algonquin	1.00
Pictorial History of Algonquin Provincial Park	1.50
Wildflowers of Algonquin Provincial Park	2.50
Mushrooms of Algonquin Provincial Park	2.50
Trees of Algonquin Provincial Park	2.95
TRAIL GUIDES	
Whiskey Rapids Trail	$0.35
Hardwood Lookout Trail	0.35
Mizzy Lake Trail	0.35
Peck Lake Trail	0.35
Hemlock Bluff Trail	0.35
Two Rivers Trail	0.35
Lookout Trail	0.35
Booth's Rock Trail	0.35
Spruce Bog Boardwalk	0.35
Beaver Pond Trail	0.35
Barron Canyon Trail	0.35
Brent Crater Trail	0.35
TECHNICAL BULLETINS	
No. 1, Checklist of the Butterflies of Algonquin	$0.75
No. 2, Checklist of the Bryophytes of Algonquin	0.50
No. 3, Wolf Howling in Algonquin Provincial Park	0.75
No. 4, Checklist of the Vascular Plants of Algonquin	1.00
No. 5, Acid Rain in Algonquin Provincial Park	0.75
No. 6, Checklist of the Conspicuous Fungi of Algonquin	1.00
No. 7, Checklist of the Lichens of Algonquin	0.50
No. 8, A Chronology of Algonquin Provincial Park	1.00

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